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PAGE 6

ATARI USERS MAGAZINE

September/October 1987

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Issue 29

September/October 1987

'The Magazine for the Dedicated Atari User'

NEXT ISSUE ...

ANIMATED 3-D MODELLING! Remember Solid Modelling? Now Philip Robinson has a routine for 3-D animation
LETTER CASTLE – a great learning game
Lots of reviews that wouldn't fit in this issue and lots of new ones
Copy date is 10th September. Publication date 29th October.

PAGE 6 is published bi-monthly on the 1st of each alternate month.

PAGE 6 is a users' magazine which relies entirely on readers' support in submitting articles and programs. The aim is to explore ATARI computing through the exchange of information and knowledge. We will pay for articles and programs where appropriate and we hope that readers will enjoy seeing their work published. In turn we hope that other readers will learn from the articles and programs submitted and increase their enjoyment of Atari computing.

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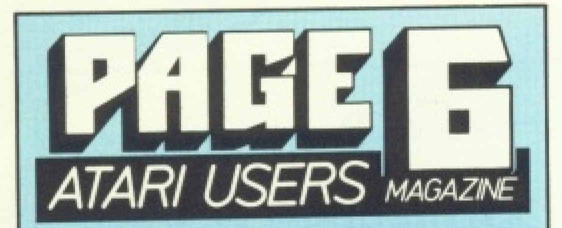
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Issue 29 Sept/Oct 1987

'The Magazine for the Dedicated Atari User'

THE CREDITS

Full 'official' credits are on page 3, here are the acknowledgements.

Les Ellingham did the editing

Nicola Parry looked after the ads

The Regular Contributors are ...

Garry Francis
Mark Hutchinson
Matthew Jones
John Davison
John Davison jr
John Sweeney

Welcome to new 8-bit reviewer
Paul Rixon

Cover illustration by **Gerald Newton**

All other contributors for this issue are credited alongside their articles or programs. Thanks to everybody.

Thanks also to the following for helping with the long nights in preparing this issue: Van Morrison, Jean-Michel Jarre, Elvis Costello, Clannad, Christy Moore, Patrick Street, Enya, Suzanne Vega and many more.

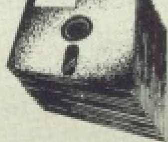
Serious? You bet! But this computing is supposed to fun as well isn't it?

The next issue of PAGE 6 could feature YOUR article or program.

PAGE 6 is put together almost entirely with Atari equipment and software. Hardware used: 130XE, 1050 disk drive, 810 disk drive, 850 Interface, modem, NEC 8023 printer, 1040ST, SM124 monitor, Atari SH204 hard disk drive, Epson RX100 printer, Microstuffer Buffer. Software used: Superscript, Turbo Basic, Tele-Talk, Kermit and several custom written utilities on the 8-bit. STwriter, PC Intercomm, Thunder and Fleet Street Publisher on the ST.
Copy is prepared on a 130XE using Superscript and various custom written programs and then transferred to the ST via 8-bit Kermit and PC Intercomm. It is then spell checked and the layout drafted with Fleet Street Publisher. Finished copy is output from the ST to a Konnect 2 cassette machine and then fed into a Monotype Lasercomp typesetter.

YOU CAN GET PAGE 6 ON DISK

- SEE PAGE 69



Editorial



With this issue we (hopefully!) welcome thousands of new readers. If this is your first PAGE 6, welcome! I hope that you get as much enjoyment from the magazine and your Atari as I have done over the past five years. You may think that you have picked up a new Atari magazine but you are in fact reading the longest established Atari magazine in the UK, you have already missed 28 issues! This issue is, however, our first on the newsstands so, if our existing readers will bear with me for a while, I would like to tell you what PAGE 6 is all about.

I started the magazine long ago in the days when the only support Atari got was from a couple of newly founded American magazines and I have tried to make it a magazine that users who really care about their Atari computers can enjoy. I bought one of the first Atari 400's brought into the UK and many of our regular contributors have been using Atari computers for as long. The one thing that, I hope, sets us apart is that everybody who contributes to the magazine is a believer in Atari. You won't find any journalists, or staff writers or freelance scribes or a publisher to whom the magazine is just another earner, just fellow enthusiasts who have been encouraged to share their thoughts and discoveries with you. We don't knock anybody else, it's just that the magazine is put together by people who have been in love with Atari for many years and I believe that PAGE 6 reflects the very best on the Atari scene.

Most contributors started out, just like you, by reading the magazine but have now turned into accomplished writers who can turn out objective reviews, interesting articles and some incredible programs. You will notice that our reviews tend to be long, because our reviewers know their Atari's and I encourage them to study programs in depth before writing their reviews. Our program listings are often even longer! PAGE 6 has published some of the most complex, interesting and well-written programs for the Atari and will continue to do so. Don't be afraid to type them in, or send for the disk that accompanies each issue if you really don't have the time.

I am sure that you want to get on and read the magazine so I won't keep you long. I have always believed that PAGE 6 belongs to its readers and I hope that you too can feel that it is *your* magazine. Several of our contributors encourage you to write to them and I hope that you will take up their invitation and also let me know what you want to see in the magazine. You might even like to contribute programs and articles. They will be more than welcome!

TYPE IN TYPO!

If you want to type in any programs from PAGE 6, *please* type in TYPO 3 first. It is included in every issue and is one of the finest error checking programs ever published. Each line is checked *as it is typed in* and you will find it invaluable. Some of those long listings may seem daunting but many of our 'old' readers have been typing them in for years without any problem. You can too, and typing in listings is one of the best ways to absorb those programming techniques that others have discovered.

WHY PAGE 6?

You may already know, but if it is a puzzle let me explain. When I first tried to find a name for the magazine I wanted something that would be identified with the Atari machine (Atari wouldn't let me call it Atari User!!) so I thought of all the various 'bits and pieces' that made up the machine. The Operating System is divided up into 'pages' for easy identification of various routines and one of these pages was deliberately set aside for users to input their own routines. This page was page 6 and as the idea of the magazine was to encourage users to submit their own routines and programs for publication, it seemed like a good name for the magazine! So PAGE 6 was born. I added Atari Users Magazine for clarification and took it from there.

People still get puzzled but it soon trips off the tongue as several thousand readers who have discovered us over the years will know!

Enjoy this issue. There are some great programs and articles, some serious, some fun, but all written by dedicated Atari Users. Just like you.

Les Ellingham

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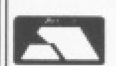
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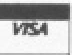
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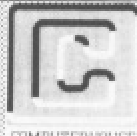
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The Controller Card

Desktop Management System

For the Atari 800XL/130XE Computers

One of the most powerful features of the ATARI ST and COMMODORE AMIGA is the 'DESKTOP', this system allows the user to have a range of utilities in memory while running commercial software, when you access the desktop system the commercial software will be temporarily frozen. The Controller Card is an internal hardware modification that when installed into your Atari 800XL/130XE will give you the most advanced Desktop Management System available today . . . .

DESKTOP MASTER DISK

Snapshot Printer Dumpers with the SHQ

Printout screens from commercial game title pages to graphic application packages. Will handle any graphics mode including mixed graphics modes. Full A4 size printouts, built-in shade selector. Included is our unique SHQ system which is an ultra high definition bit image printout comparable to a photocopy (for Epson and compatible printers.)

Superdump II Memory Dumper

The perfect utility for software development, just dump the contents of memory where the error occurs then examine and rectify. Can also be used to upgrade your cassette software to disk or make disk to disk backups.

The O.S. Boot Menu

A Desktop resident multiboot menu, by simply pressing the HELP KEY you exit the main program to the menu.

Disk I/O Analyser

A unique and very powerful disk debugging tool which prints out all the relevent information concerning the interaction between the disk drive and computer as the disk software is loading or reading/writing data.

The Control Panel

This utility will allow you to alter a wide range of system parameters such as: Auto scroll, I/O noise, inverse flash, key click, fast cursor/keyboard debounce rate, primary system colours, the system baud rate and the system character set (14 alternative character sets to choose from).

400/800 Operating System Saver

This facility will allow tou to save the O.S. from the 400/800 Atari computers to create true emulators or upgrade customised roms such as OMNIMON to disk to run on the 800XL/130XE computers via the Desktop.

Additional Desktop Library Disks

Library Disk #1 – 1029 Snapshot Printer Dumpers
Similar to the SHQ Snapshot printer dumpers but dedicated for the 1029 printer.
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DON'T TOUCH THE CIGAR LIGHTER!



Here are two guys who are really miffed that Timothy Dalton got the part of James Bond! Still they have got the consolation of having a nice computer game called The Living Daylights and, besides, who wants to have their Aston Martin clamped in the car park of Pinewood Studios!

The two guys in question are Dominic Wheatley and Mark Strachan of Domark who, after the incredible coup of getting Trivial Pursuit to the Atari and other computers have now tied up the rights to the latest Bond movie. The game is already out on the Atari and could already be topping the charts.

An XLENT Anniversary

Software company XLENT Software (UK) Ltd. shortly celebrates it first birthday having been conceived at the Personal Computer World Show in 1986 and incorporated in October of that year. XLENT, as an American company, had become well known to Atari users fro many years of producing utility software that combines the graphic power of the Atari machines with the printed page and although their products had been available previously in the UK they wanted a more permanent representation here to enable Atari users to benefit from 'home produced' software.

Two American directors of the company, Linda Kubota-Barnes and Barbara Cauldron (who says there are no women interested in computing!) had discussions with Mike Reynolds-Jones and Peter Fellows of Software Express and the XLENT UK company was born. So far six products have been launched in the UK, four – Typesetter Elite, Megafont ST, Write 90 and The 1st XLENT Word Processor – are original American products but two are newly written programs from this country. ST owners can now obtain the inexpensive and simple to use Label Maker to take the drudgery out of producing any type of label on their printers and 1029 printer owners at last have something exciting in Ten Print, a utility for printing documents in a choice of several different fonts on their machine.

Mike Reynolds-Jones says that the company are actively looking for more applications written in the UK, for marketing both here and in the States, provided that they are in the graphics/print related software line with which the company have established an excellent reputation. Future releases planned include the PM Interface which will allow Print Master files to be combined with Typesetter Elite and also a ClipArt disk for Typesetter Elite. There will also be a related Utilities disk and Typesetter Page Design plus Megafont II for the 8-bit machines. There could of course also be some exciting print related software from the UK. Mike Reynolds-Jones is certain that Atari owners in this country have the ability to write top class programs.

A year passes quite quickly in the computer field. Many don't survive that long but XLENT are still going strong and intend to get even stronger in the coming year.

XLENT SOFTWARE (UK) Ltd. can be found at 516, Alum Rock Road, Alum Rock, Birmingham, B8 3HX

HEWSON LOOK TO ATARI

Another established software house is waiting to turn its attention to the Atari. Already established on other machines with smash hits such as Uridium and Firelord, Hewson is now looking for programmers on both the ST and Atari 8-bit.

Games designers and writers are invited to get in touch with Mark Whiffen at Hewson with their work. What are they looking for? Games! Simple games, sophisticated games, long games, short games, quick games and quirky games! They don't mind what. Shoot 'em ups, arcade adventures, sports games and combat games will all be considered so if you have one up your sleeve why not get in touch. Maybe another British software company will then start supporting the Atari.

You can contact Mark Whiffen at Hewson Consultants Ltd., 56B Milton Trading Estate, Milton, Abingdon, Oxon.

MEANWHILE ...

That Mike Reynolds-Jones is a busy man! Software Express, already established as the premier Atari dealer in the Midlands, recently took over the Computer World shop in Broad Street, Birmingham. Now Atari owners visiting Birmingham for only a short time have the chance to visit a branch of Software Express just a short distance from the city centre. The full range of Atari products and software – and even the VCS – is on sale at Broad Street but the company will also be continuing full support of the Atari at their existing premises in Alum Rock Road.

Taking over Broad Street is something of a home-coming for Mike as that is where he first joined the ranks of Atari retailers after first buying one of those old 400's and, like many of us, getting hooked!

LEWD SEX ROMP AUTHOR CHOOSES ROBOT PARTNER



That's not our headline, it's what Infocom say about their latest release for the Atari XL/XE!

After writing Leather Godesses of Phobos, Steve Meretsky has got back together with Floyd, the robot from Planetfall in Infocom's latest called Stationfall. The game follows on nicely from Planetfall and you have been promoted from Ensign Seventh Class to Lieutenant First Class (didn't you do well!) .. on the paperwork task force!

Another boring day sees you travelling to a nearby space station to pick up a supply of trivia forms when you find out that your companion on the journey is the mischievous, playful, Floyd! When you arrive at the space station, however, all is not routine. The place is deserted apart from a few weirdos and then even Floyd starts behaving strangely ...

Another Infocom, with all the usual bits in the box, which will set you back £24.99 for your XL or XE.

ATARI GO FOR THE FASTEST



I want one! I have got an Atari Olympics badge but I really do want David Brodie's BBW works Starion Turbo which Atari sponsored in this year's British Saloon Car Championship Grand Prix at Silverstone in July. The sponsorship formed part of wider celebrations at Silverstone where Atari entertained many of the leading personalities in the computer retailing industry (but not the Editor of PAGE 6!) in a presentation of its advertising and promotional plans for 1987.

It is good to see Atari once more grabbing the headlines in promoting the company, let's hope there is more to come. How about some help in souping up my Mitsubishi Sigma Estate? I don't mind having Atari painted all over the front! No? Okay, I'll settle for a ride round Silverstone with David Brodie in his next practice!

SOFTWARE SHORTS

U.S. Gold have now released the renowned Print Shop and associated utilities from Broderbund in its original Atari 8-bit form. Print Shop and The Print Shop Companion have already been reviewed in PAGE 6 and the message is, if you have a printer, get it! The programs work on most printers but not the 1029 so be careful!

From **S.S.I.** via U.S. Gold comes the sequel to the acclaimed civil war simulation Gettysburg, Rebel Charge at Chickamauga whilst promised later in the year is War in the South Pacific which simulates three historic battles from World War II.

Digital Integration are shortly releasing a new combat simulator for the Atari 8-bit and ST. F-16 COMBAT PILOT is, they claim, the most advanced and authentic simulation of General Dynamics F-16. If it really is that good it will be well worth a look from the many Atari flight fanatics. Digital Integration are serious about this flight simulation stuff for they sent a complete specification of the F-16 issued by the U.S. Air Force along with the press release!

From **Infocom** comes The Lurking Horror where you explore a world that rivals your most hideous visions. Foolish enough to descend into the basement of the George Underwood – Edwards Institute you discover something really *horrible*. And I can tell you there is something pretty horrible inside the box of this one! On the XL/XE at £24.99 and on the ST for £29.99

Not software as such, but an essential aid, is the range of **Suncom** joysticks now being marketed in the U.K. by Microprose Software. Suncom have a large range of controllers, only a few of which have previously been available in the U.K. Now you will be able to chose from them all with the first showing of the entire range at the coming PCW Show.



How to Type in the Listings

and get them right!

The program listings in PAGE 6 are prepared carefully to ensure that they can be typed in as easily as possible. Before typing any listings ensure that you are familiar with the use of the Shift and CONTROL and INVERSE keys as outlined in your computer manual. The listings are prepared to match exactly what you see on screen. Every character that you may see in a listing is included in the chart below for cross reference. By using TYPO 3 you can ensure that you type in the programs EXACTLY as they are printed. Remember a single typing mistake may mean a program will not run.

WHAT ARE THOSE CODES?

Each line of a program begins with a special two letter code. THESE SHOULD NOT BE TYPED IN. They are used by the program TYPO to check that you have typed each line correctly. IF YOU HAVE NOT ALREADY TYPED IN THE TYPO 3 LISTING PLEASE DO SO NOW. The program can be used as you type in each line of a program or to check an already typed program. The code for each line will match but if you have problems check the listing conventions below carefully, you are most probably typing a CONTROL character incorrectly. TYPO 3 cannot check if a line has been missed so if you have problems in running a listing count the lines in the program and ensure none are missing. If the TYPO codes match and the program still does not run, LIST it to cassette or disk using LIST "C:" or LIST "D:filename", switch off the computer, re-boot and then ENTER the program using ENTER "C:" or ENTER "D:filename". Save this version in the normal way.

HOW TO USE TYPO 3

1. Type in the listing carefully for although you can use TYPO 3 to check itself (see 6 below) it may not work if you have made mistakes.

2. SAVE or CSAVE a copy of the program.

3. Each time you want to type in a program listing RUN TYPO 3 *first*. The program will install a machine code routine in memory and then delete itself. Now type in a line as shown in the magazine *excluding the first two letter code* and press RETURN.

4. A two letter code will appear at the top left of your screen. If this code matches the one in the magazine carry on and type the next line. Note, the code will not match if you use abbreviations. If you prefer to use abbreviations LIST the line you have just typed, move the cursor to that line and press RETURN. The code should now match.

5. If the code does not match, use the editing keys to correct the line and press RETURN again. Repeat if necessary until the codes match.

6. To check a line you have already typed LIST the line, place the cursor on that line and press RETURN.

7. When you have finished a listing just SAVE or CSAVE it in the normal way.

You can type in a program without using TYPO3 and then check it by SAVEing or CSAVEing a copy of the program, running TYPO 3 and then LOADing or CLOADing your program and proceeding as in step 6 above.

Always SAVE or CSAVE a program before running it and always use TYPO before telling us that a program will not run.

```
EI 1 REM ********************************
AL 2 REM *  TYPO III by Alec Benson     *
         *            June 1985.        *
SA 3 REM * A proofreader for ANTIC and *
         *    PAGE 6 based on TYPO II   *
         * published by ANTIC magazine *
EL 4 REM ********************************
SG 100 GRAPHICS 0
WG 110 FOR I=1536 TO 1791:READ A:CK=CK+A:
   POKE I,A:NEXT I
CG 120 IF CK<>30765 THEN ? "Error in DATA
    statements - Check Typing":END
YM 130 A=USR(1536)
VT 140 ? :? "TYPO III is up and running":
   NEW
MA 1000 DATA 104,160,0,185,26,3,201,69
HG 1010 DATA 240,8,200,200,200,192,36,208
QB 1020 DATA 242,96,200,169,79,153,26,3
RK 1030 DATA 200,169,6,153,26,3,162,0
RR 1040 DATA 189,0,228,157,79,6,232,224
TO 1050 DATA 15,208,245,169,93,141,83,6
KC 1060 DATA 169,6,141,84,6,173,4,228
EU 1070 DATA 105,0,141,95,6,173,5,228
BK 1080 DATA 105,0,141,96,6,169,0,162
KK 1090 DATA 3,149,203,202,16,251,96,0
ZR 1100 DATA 0,0,0,0,0,0,0,0
LD 1110 DATA 0,0,0,0,0,0,32,94
JM 1120 DATA 6,8,72,201,155,240,55,230
TV 1130 DATA 203,133,209,138,72,169,0,133
TW 1140 DATA 208,162,8,10,38,208,6,209
MF 1150 DATA 144,7,24,101,203,144,2,230
RL 1160 DATA 208,202,208,239,133,207,24,1
   65
TM 1170 DATA 204,101,207,133,204,165,205,
   101
AW 1180 DATA 208,133,205,165,206,105,0,13
   3
XH 1190 DATA 206,104,170,104,40,96,138,72
NR 1200 DATA 152,72,162,0,134,207,134,208
GF 1210 DATA 160,24,6,204,38,205,38,206
EA 1220 DATA 38,207,38,208,56,165,207,233
TM 1230 DATA 164,170,165,208,233,2,144,4
SK 1240 DATA 134,207,133,208,136,208,227,
   162
CB 1250 DATA 8,165,207,133,204,165,208,6
XN 1260 DATA 204,42,201,26,144,4,233,26
MB 1270 DATA 230,204,202,208,242,133,205,
   169
BC 1280 DATA 128,145,88,200,192,40,208,24
   9
WV 1290 DATA 165,204,105,160,160,3,145,88
OA 1300 DATA 165,205,24,105,161,200,145,8
   8
MQ 1310 DATA 32,69,6,104,168,76,153,6
```

Lower case	Upper case or Shift
1	!
2	"
3	#
4	$
5	%
6	&
7	'
8	@
9	(
0	)
<	
>	
a	A
b	B
c	C
d	D

Lower case	Upper case or Shift
e	E
f	F
g	G
h	H
i	I
j	J
k	K
l	L
m	M
n	N
o	O
p	P
q	Q
r	R
s	S
t	T

Lower case	Upper case or Shift
u	U
v	V
w	W
x	X
y	Y
z	Z
-	_
=	|
;	:
+	\
*	^
,	[
.	]
/	?

ESC ESC
ESC CTRL -
ESC CTRL =
ESC CTRL +
ESC CTRL *
ESC SHIFT CLEAR
ESC DELETE
ESC TAB
ESC SHIFT DELETE
ESC SHIFT INSERT
ESC CTRL TAB
ESC SHIFT TAB
ESC CTRL 2
ESC CTRL DELETE
ESC CTRL INSERT

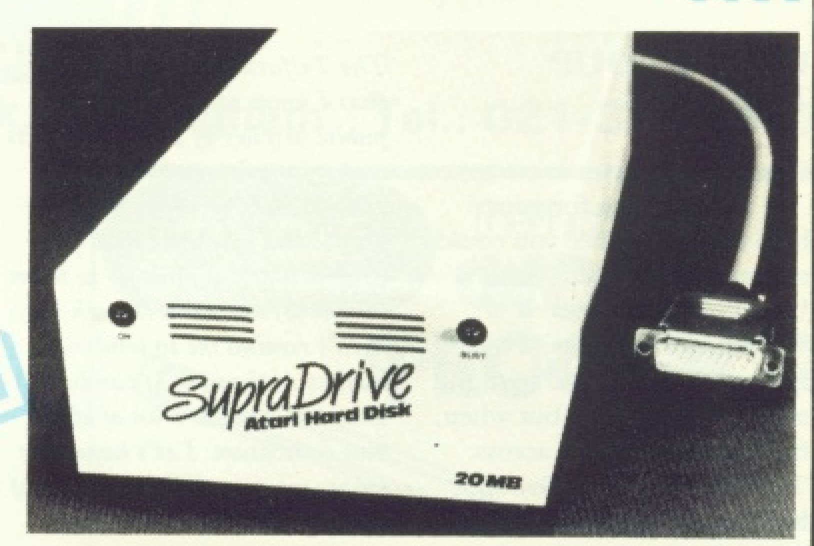
INVERSE SPACE

WIN!

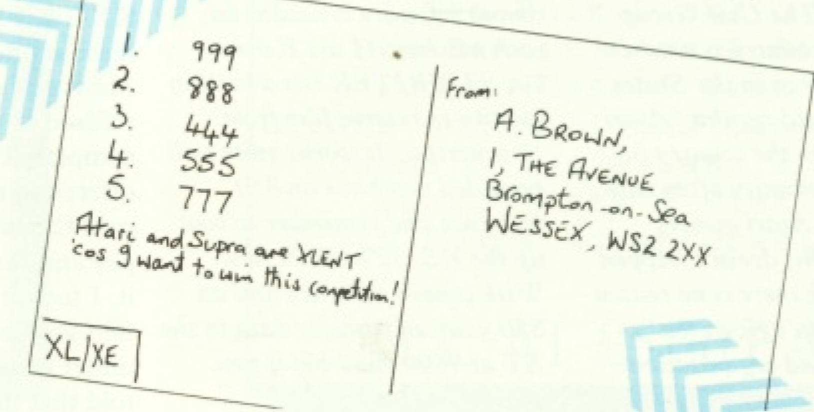
£1000 worth of prizes

To celebrate our first issue on the newsstands we have a free to enter competition with some cracking prizes courtesy of Frontier Software and XLENT Software (U.K.) Ltd. The competition is open to everybody whether you are a first time reader or have been with us since issue 1. So, find a pen, fire up the brain and have a go.

THE PRIZES



First prize is a 20Mb Hard Disk Drive from Supra for either your Atari XL/XE or ST (just tell us which system you have).



Ten runners up prizes come from XLENT Software (U.K.) Ltd. There are five copies of the 1st XLENT Word Processor for 8-bit owners and for ST owners, two copies of Megafont ST, two copies of Write 90 and one Typesetter Elite.

THE COMPETITION

Nice and easy! Just give us the numbers. Couldn't be easier, but think about it!.

1. How many Mb on the biggest Supra?
2. What box can you find Frontier Software at?
3. How many already from XLENT?
4. What number would you find XLENT people at?
5. How many pages in page 6? (Think about it!)

All right, it can't be that easy can it? So, as a tie-breaker, write us a slogan. Both XLENT and SUPRA are a play on words so we want you to use both to describe Atari in some way using not more than 20 words.

HOW TO ENTER

Write your name and address on a postcard (preferably) or on a plain sheet of paper and alongside write the numbers of the questions above with your answers alongside. Stick your slogan at the bottom and in the bottom left hand corner write XL/XE or ST to indicate what system you have. Don't write anything else. Send it to THE SUPRA COMPETITION, PAGE 6, P.O.BOX 54, STAFFORD, ST16 1DR. Closing date is 25th October 1987.

1. 999
2. 888
3. 444
4. 555
5. 777

Atari and Supra are XLENT 'cos I want to win this competition!

XL/XE

From:
A. Brown,
1, The Avenue
Brompton-on-Sea
Wessex, WS2 2XX

Rules:
1. The winners will be chosen by the Editor from the entries received on or before 25th October 1987
2. Only one entry per reader is allowed.
3. No substitution of prizes for cash or other items will be allowed.
4. The Editors decision will be final. Don't argue!

Readers Write

USER GROUP THANKS

Dear Page 6,

I am writing for your help to ask whether you could tell me if there is an Atari User Group in the Stoke-on-Trent area? I have been so disappointed with the support for my 800 but when, by accident, coming across Telford Atari User Group holding a display in Telford centre I was amazed at the demos and also the commercial software that they had on show. If there is no group in the Stoke area how about local users getting in touch to see if we can organise our own club? Also would any other User Groups give us some advice on starting our own club?

I can't put into words my thanks to the Telford User Group for giving me a new appetite for my Atari and especially Jason Lunt of Brookside, Telford. If anyone is in the Telford area, I am sure they will find a warm welcome from the Telford User Group. They meet at The Madeley Community Centre, Telford every Saturday at 7 p.m.

Kevin Sherwin, 1, Beechmont Grove, Birches Head, Stoke-on-Trent, Staffs

If you live in Stoke get in touch with Kevin. The User Group scene in this country is nowhere near as strong as in the States where they hold regular 'Atari Fairs' all over the country for the local community often with thousands of Atari owners attending. This doesn't happen here although there is no reason why it shouldn't given the enthusiasm and organisation.

The Telford group is the first that I know of to organise a public display of Atari products and software seen by tens (hundreds?) of thousands of people and wholehearted congratulations must go to them for the effort (even though they didn't remind me to send our leaflets to them!). It can be done but it needs a lot of effort and dedication. Let's hope that we see more in different parts of the country. I am sure Atari would be interested if approached with sensible propositions.

XE/ST TRANSFER

Dear Page 6,

Could you please let me have some information about how to transfer data files and screen files between the XE and ST?

M.J. Horwell, Cornwall

It is quite possible to link up the 8-bit Atari computers to the ST via a null modem cable. One problem though is that you need an RS232 interface for your 8-bit and if you haven't got one it might be expensive! I regularly and successfully transfer text files back and forth between the 130XE and an ST using an 850 interface and a null modem cable. Some form of comms software is needed on each machine (I use Kermit) but STWRITER has a built in facility to receive files from Atariwriter. It works quite well provided you have an 850 interface and remember to boot up the RS232 handler first. With comms software and an 850 you can transfer data to the ST at 9600 baud but if you want to send it the other way you seem to be limited to 2400 baud as the 130XE can't keep up.

We have a contribution that we hope to publish when a couple of problems are sorted out. It comprises of a couple of short programs for each machine and a simple cable which you can build for a few pounds. As it uses the joystick ports of the 8-bit machines and the Midi socket on the ST no expensive interface is required. Look out for it.

Got anything interesting to talk about? Or some questions to ask? Or some tips to pass on? Write to Readers Write, PAGE 6, P.O. Box 54, Stafford ST16 1DR

SUPPORT YOUR LOCAL DEALER

Dear Page 6,

I read with interest your reply to N.J Leonard on the subject of Atari dealers. In November last year, with only 6 days of its guarantee remaining, my Atari monochrome monitor passed away. Although I had no record of the sale, my local Atari dealer, York Computer Centre, replaced the monitor on the spot. I can only confirm your remarks, that a few extra pounds spent with your local Atari dealer are worth every penny.

Your readers may be interested to note that I have had problems in buying a Sony monitor at 'discount' prices. To cut a long story short I purchased a Sony KX-14CP1 monitor from a discount dealer at the PCW Show and after three days it refused to work. The company I bought it from offered to repair it only if I paid the carriage. I refused to pay and they refused to repair it. I took it to my local Sony Service Centre to be repaired under guarantee only to be told that the guarantee was not valid as it had been imported from an overseas dealer!

I can only re-iterate your comments. Wherever possible it always pays to buy through a reputable dealer and remember that by supporting your local dealer you are supporting your Atari neighbourhood.

N. Crozier, Malton, N. Yorks

SHORTS ...

Here's a selection of questions from recent letters.

How do you get past the Ravenous Bugblatter Beast of Troll in HitchHiker's Guide To The Galaxy?

Easy! You read Garry Francis's column in issue 21!

Could you tell me if there is a BBC emulator for the ST as I heard about one a long time ago?

There was a BBC emulator at the Personal Computer World show in 1985 but it seems to have disappeared without trace. Anyone know what happened? Could it have been a problem with Acorn not liking the idea?

NEW AGE

Dear Page 6,

Congratulations on Issue 27's GAMMON program, it really is very good but have you listened to the 'waiting' sonics before your first move? New Age music if ever I heard any!

Please congratulate Dave Hitchens for me and ask him to write more of this hypnotic stuff. He should try listening to something like 'No Pussyfooting' by Robert Fripp and Brian Eno to see what I mean! Om ......

'JD' Collins, London

There is no end to what you can find in PAGE 6!

SUPRA's HARD DISK

for XL/XE

You can't really have a Hard Disk on an 8-bit system, can you? Yes you can!

What is the ultimate luxury addition to your Atari 8-bit system? How about a Hard Disk Drive? Most of you are probably aware of hard disks for the ST and 'business' computers but may not have realised that you can in fact add a hard disk to your existing Atari XL or XE system. The only drawback is the horrendous cost but, if you have already invested a lot of money and time in your system it may well be worth it. There are a lot of serious Atari 8-bit owners who have stretched their systems to the limit, so why not a little further?



ENTER SUPRA

The only hard drive available, at least in this country, is the Supra 20Mb Hard Disk drive which is imported by Frontier Software and sells for £749.95. It is small, quiet, easy to use and has a prodigious appetite for programs! 20 Mb means that you can have the equivalent of over 208 single density floppy disks on one drive!

Let's suppose you have persuaded the bank manger that you can afford one of these beasts. It will arrive in a fairly small box, well packed in foam, and inside you will find the drive, a power supply, a copy of MYDOS, plus instructions and an interface to connect it up to your XL or XE. If you have an XE you will need to use the extra board supplied to enable you to be able to still use the cartridge port on the computer. This board is the only disappointment, being a bare circuit board which makes the system look tatty. It really should be cased at this price. The drive itself will surprise you as it is a lot *smaller* than a 1050! It measures 285mm × 137mm × 70mm and looks really neat in a solid metal casing similar in colour to the 130XE.

Setting up is easy. Find somewhere safe for the drive (they don't like to be knocked about in use), plug the interface to the computer and to the drive, connect up the power to the drive and away you go. Initially you will have to boot up with a copy of MYDOS in Drive 1 but thereafter you can write this to the Hard Drive and you will never need a DOS disk again! The interface, by the way, has a built in printer interface so you could save a bit of money if you add a printer to the system. You will only need to find a ribbon cable which you can pick up for around £7.

STARTING TO USE IT

If the drive is not already formatted you will need to do this but full instructions are given in the manual. The review drive came ready formatted, so I did not try this out, but experience on a Hard Drive for the ST suggests that there should be no problem. As 20Mb is a *lot* of space, the drive is divided into four *logical* drives. They are all of course on the same disk but are treated as totally separate drives by software. The standard division (which cannot be altered) is drives 1 and 2 configured to the same size as a normal 1050 and drives 3 & 4 configured to each hold 9.2Mb. The latter two drives each have 36,800 sectors but these are true double density sectors of 256 bytes. Drive 1 is used to copy your DOS files to, and once done can be used to boot up the system. Any of the drives can then be accessed and used as you would normally use a floppy drive. The major difference is of course speed and the amount of storage. One warning about using drive 1, is to be very, very careful about putting an AUTORUN.SYS file on it. I tried it and as the program was one that you could not exit from there was no way to get to DOS and therefore load any other program!

SOME TESTS

So how fast is it? I did not try any really fancy benchmark tests but did a few comparisons of a nature likely to be useful. Firstly I tried loading files of various sizes. A BASIC program occupying 144 sectors on a normal single density floppy loaded in 19 seconds from the floppy and just 2 seconds from the Supra! As the files get bigger, so the time saved is greater. A 242 sector binary load file took 30 seconds from a floppy and 3.3 seconds from the hard disk. Some difference! Actually reading and writing data to disk did not show the same type of time difference but was nonetheless impressive (see Table 1). Incidentally NOTE and POINT can be used in the same way as a normal drive to access any sector on any logical drive.

review by Les Ellingham

TABLE 1

Timings for writing/reading a four letter string ("TEST") to disk (times in seconds).

Number of times		Supra	Floppy Verify on	Floppy Verify off
1000	Write	6	22	13
	Read	8	12	12
10000	Write	65	211	126
	Read	8	130	130

DOS

DOS 2.5 cannot access the number of sectors available on the Supra drive so a copy of MYDOS is supplied. This also has the ability to handle sub-directories which is essential for the number of files you will be able to fit on the drive. Whilst MYDOS is perfectly usable, Frontier recommend that you use SpartaDos. The only reason it is not supplied is a problem with Supra licensing the program.

CONCLUSIONS

The Supra works like a dream with the 8-bit and could be a godsend to anyone with a large collection of frequently used programs. The only problems I could think about are that it may not be possible to transfer many commercial programs to the Hard Drive (ST owners have that problem too) and you could find problems in backing up the drive. As far as I know there is no software available to back up the 8-bit Supra drive and whilst you can back up each program individually, it is extremely time consuming. A major problem could occur if you have any database software that sets up a database occupying more room than a normal floppy. You can still use it but won't have a back up!

Would I buy one? Well, it is an awful lot of money but it is a superb piece of equipment to use. No more searching for DOS disks, no finding the right disk for your program and some really fast access for programming, especially if you write long machine code routines. As I said at the beginning, if you are sufficiently committed to, and happy with, your 8 bit Atari, it is the ultimate addition. If you can find the money, I would not hesitate to recommend it. Once you have got over the shock, you'll love it!

No. 18

RICK HANSON

by Garry Francis, Sydney, Australia

Garry Francis always writes in-depth reviews. This time he excels himself with a full review and playing strategies for Robico's first Atari adventure

THE REVIEW

Rick Hanson is a new Adventure published by Robico Software. It consists of a single-sided disk and the cutest little 12-page instruction booklet that you ever did see. This is packed in a plain black box – strictly low budget, but practical. Also thrown in is a leaflet offering a Robico sweater (at a price, of course) and an Adventurer's Note Book. This last item is a bit of a mystery, for it is simply a little book of 32 blank pages! It's obviously meant for taking notes, but really, who's going to use it? I appreciate the gesture, but why not just let the player provide his or her own note paper and cut the price of the game?

The instruction booklet provides a wealth of information. For starters, we learn that Rick Hanson is an all-text game which supposedly forms the first part of a Rick Hanson trilogy. To the best of my knowledge, parts 2 and 3 have not been released for the Atari at the time of writing. If they have, you should be able to find them under the titles of Project Thesius and Myorem respectively.

Rick Hanson was originally a cassette-based BBC/Electron game written by Robert and Mike O'Leary. The Atari translation was done by Nick Gregory, author of The Slave. Oh, oh! Is this a bad omen? Anybody who's read my review of The Slave in Page 6 issue 24 will know that I was not exactly impressed by that particular effort. Would Rick Hanson prove to be the same? Read on fellow Adventurers and find out...

LIKE JAMES BOND

Rick Hanson is a Special Agent somewhat like James Bond. He presumably has the same license to kill, for in this game, he is given the mission of assassinating General Garantz. We are not told anything about General Garantz or why he should be killed except that he is evil and needs to be eliminated "to save the world from the final holocaust". Sounds a bit melodramatic doesn't it?

Once the game is booted and you've been through the titles, you are presented with a rich and atmospheric room description. All room descriptions are excellent, although I would often argue about the sentence structure. This is a personal point, but a sentence is easier to read when a descriptive phrase is placed near the noun it is describing. Rick Hanson tends to put them at the opposite ends of the sentence. The only descriptive error I noticed was where the tarmac road came to an end. The description said it joined a dirt trail to the west, but it should have been to the east.

The spelling is excellent throughout and the punctuation is also reasonably good. There is an excess use of commas because of the warped sentence structure, but again, this is a minor point. The only real spelling and/or punctuation errors that stuck out were an excess pair of quotes (at the bookshop) and a couple of places where spaces had been omitted after commas or added between words.

Beneath the room description is the prompt. This is a whole phrase like "What now, Hanson?" which has the annoying feature of changing from turn to turn.

The parser is supposed to understand full sentences and multiple statements, but I had a lot of trouble getting it to understand anything too complicated. You're better off sticking to simple commands wherever possible. The parser analyses your command and acts on certain key words. These key words are printed after typing your command, so that you can always see exactly what is being acted upon. For example, if you typed GET THE OLD BOOK, the parser may echo GET BOOK. This tells you that the parser did not understand THE or OLD and hence these have been ignored. This is a novel feature which I haven't seen used before, but it does have a couple of disadvantages. Firstly, it highlights the parser's shortcomings and secondly, it wastes space on the screen by echoing what you already know. In the extreme case, you could have a command essentially echoed three times – once when you type it, once when the parser echoes it and once when the program's response repeats it in a more descriptive sort of way.

STICK TO SIMPLE COMMANDS

If you stick to simple commands as suggested above, the parser is good, but it does have trouble with some input. Here's a few humorous examples. When I said EXAMINE PLATFORM ONE, it described my handkerchief. When I tried to PULL HANDLE on the one-armed bandit, it said "I don't see a trolley jack". When I tried to TIE ROPE TO ME, it responded "You don't have a mirror".

One major problem is when the first word of a command is not understood. It will ignore this word and try to treat the second word as the verb. If this isn't a verb (and it shouldn't be), then you're in trouble. For example, if you try to KISS SINGER (in the tavern), it responds "I don't know how to SINGER". What it really means is that it doesn't know how to kiss.

The response to the inventory command is atrocious. For example, typing INV at the beginning of the game tells you

that "You're carrying your handkerchief,, and.". Oh my goodness. And after all my praise for the program's good punctuation. The inventory command often gives you a whole string of commas with nothing between them and there's never anything after 'and'.

Despite my comments on the parser, my only real gripe with Rick Hanson is that the disk is accessed after every single command! This must lead to lots of wear and tear on both the disk and the disk drive. Fortunately, the disk does not seem to be copy-protected, so you can at least use a backup. But PLEASE don't give copies to your friends or Robico will surely stop supporting the Atari.

THE PUZZLES

The game's puzzles are generally fairly simple and straightforward, hence I suspect it would be a good Adventure for a beginner. If you have any problems, then there is a comprehensive set of hints at the back of the instruction booklet. This is a nice touch, but they should be coded in some way so that you can't see hints or answers that you're not ready to see.

The geography of the game is huge. With 230 rooms, this puts it in the same category as Level 9. In fact, the overall feel of the game is very similar to early Level 9 games (except that the parser is much better) and this leads me to the same complaint that I have with Level 9. The game is far too big in comparison to the number of objects and puzzles. I don't mind the mapping, but it's very frustrating to do so much aimless travelling between critical locations without anything interesting happening. I'd rather play a smaller game of 50 to 100 locations with a larger vocabulary and more puzzles.

In summary, my congratulations must go to Robico and all concerned in the development of this game. Despite my nit-picking, I found Rick Hanson to be a thoroughly enjoyable game – and that's what counts in the long run. It is excellent value for money, particularly if you're a beginner. I'm now eagerly looking forward to parts 2 and 3. And how about Enthar Seven? Let's hope they all come along soon.

GAME PLAYING STRATEGIES

The following section contains hints and overall game playing strategies to make life easier for those who've already bought Rick Hanson and may be having troubles. **Do not read any further unless you're willing to make the game easier than the makers intended.** If you are looking for hints, read the following VERY CAREFULLY. There are some very subtle (and some not so subtle) clues imbedded within the text.

The Adventure begins in the entrance hall of a small, deserted railway station. Make sure you take an inventory before you begin, then explore the area around the railway station, the bridge and the platforms. You should discover a few objects including the inevitable self-destructing tape recorder. (Remember the opening sequence in each episode of Mission: Impossible?) Play the tape to get your instructions and, more importantly, to find out what to do in the next portion of the game. Don't forget to get rid of the tape recorder once the tape is finished or you'll self-destruct along with it! Everything else you discover should be taken with you. Virtually everything has a use (although some are just red herrings) and you'll need every object you can get your hands on near the end of the game.

During this initial exploration, you'll probably discover that the railway station is not as deserted as the description implies. If you go in one particular direction, you'll get shot completely unexpectedly and without warning. This is unfair! I call this the 'sudden death syndrome'. It occurs several times throughout the game, so make sure you save the game frequently. You have been warned!

You will also meet a mysterious character wearing a mackintosh, hat and glasses. Once encountered, he'll follow you everywhere. After 30 moves, he too will draw a pistol and shoot you. You can't kill him, but you can lose him. Remember that you're at a railway station. Maybe it's possible to get on a train. Ah, but how? It's all a matter of being in the right place at the right time. Once you've worked it out, you'll also find that this is the bridge to the next part of the game.

There is an interesting anomaly here. If you're playing the game after a cold start (i.e. after you've just booted the game), then the first train arrives after the 14th move. However, if you're playing after a warm start (i.e. a restart after typing QUIT or getting killed), then the first train arrives after the 10th move! Interesting. In any case, there's no way you can get everything you want in that short time. Fortunately, another train comes along every 22 moves, so the secret to solving this puzzle is to start a new game and go straight to the location where you will board the train. Wait until the first train arrives (after the 10th or 14th move), then go off and collect all the items you need. If you time things carefully, you'll be back in time to catch the next train. Coincidentally (or by design?), if you collect only the essential items (and you won't know which are essential until you've finished the game), this takes exactly 22 moves and you'll return right on time for the arrival of the second train. The only problem now is working out how to get on, but given a little thought and experimentation, I'm sure you'll jump to the right conclusion – especially if you're on your guard.

This marks the end of the first part of the game. Once you've left the railway station, there is no return, so you may wish to save the game before actually boarding the train. The saved game may also come in handy over the next few moves, for these are a linear series of puzzles where you must guess what to do within one move or die. I hate puzzles like this. Fortunately, these ones aren't too hard.

You should soon find yourself in a picturesque little village. Don't worry about the random appearances of the villager and the dog. They're just there for atmosphere. Explore the whole of the village from the entrance of the long dark alley in the south to the outskirts of the village in the north, but don't worry too much about the church just yet. After you've got everything you want in the village, you can head for the tavern at the western end of the long dark alley. Now's the time to follow the instructions given by the tape recording, but be careful wandering about the tavern. Some of the guests get a little hostile if you invade their privacy.

You could take this opportunity to clean yourself up a bit (have you looked at yourself in the mirror?), then settle down for the night. You'll wake refreshed to find a coded letter from one of your contacts. All you've got to do is decipher it. On the surface, it looks like a simple cipher whereby each letter of the alphabet is merely replaced by another letter. Spaces between words aren't affected. (I think this is called a transposition cipher.) The hard part is to find which letter is represented by

each of the coded letters. There are probably a number of ways of cracking the cipher (including computer), but I simply made the assumption that the word 'THE' would appear somewhere in the message and worked from there. Sure enough, 'THE' appeared three times and this enabled me to decode the whole message in about five minutes flat.

In retrospect, I realise that you could probably also crack the code based on the frequency of the letters used. Knowing that 'E' is the most commonly used letter in the English language, you should be able to break the code within a few attempts. Four letters share equal dominance in this particular message and, sure enough, one of them is 'E'.

Finally, you could use the method described in the hints at the back of the instruction booklet. The key to this method is your room number, but even knowing that, the solution is a bit obscure.

Now that you've got your new instructions, it's time to head for the church and the bookshop. Aha! Another coded message. This one can be deciphered the same way, but in this case, if using the method in the hints, the numeric key is found in the title of the book. Once deciphered, you should know your next objective.

Head north until you've left the village behind, then continue along the tarmac road until you find an exit to the west. Follow this and explore the area around the river, but don't try crossing it just yet or you'll find yourself in a watery grave. You can use the bridge, of course. This leads to the pretty little woodland setting which should be explored until you've found everything of interest. You can safely ignore the fallen tree and the woodland creatures. Once again, they are just for atmosphere.

Return to the tarmac road, then head back to the garage. You should now have everything you need to solve the puzzles here. If you follow the seemingly contradictory concept of pulling your weight yet lying down on the job, you will ultimately end up with one very important item. You'll get quite a bang out of this at a later stage. Best of luck with the trolley jack!

Here's an interesting aside. When you've finished the game, you'll probably want to check out the hints in the back of the instruction booklet. (You wouldn't dream of looking at them before you've finished, would you?) You will notice that the first 40 questions seem to be fairly complete and in roughly chronological order except for the omission of any hints relating to the garage area. These are tacked on at the bottom, almost as though they were an afterthought. You will also notice that there are a disproportionate amount of questions relating to the garage compared to the rest of the game. The same observations can be made about the hints and answers. In retrospect, I see that the puzzles around the garage had a different style and were generally much harder to solve than anywhere else in the game. In fact, I think this was the only point where I had to use the hints and I thought the answer to my particular problem was unfair. Can we imply from all this that the geography and the puzzles around the garage area were added for the Atari version? It certainly looks that way. Does anyone know for sure? Has anyone played the BBC/Electron version? If so, please let me know.

Anyway, once you've finished in the garage, head back to the tarmac road and follow it as far as it goes. Then keep going until you reach the dreary wastelands where you'll find a couple more important items. Head back to the river and if you're not too tired, you can now dive into the next part of the game. Save the game before you do, as there's no way you can

return to this area.

You should now find yourself in a lush meadow with nowhere else to go. Maybe the bull knows a way out. Unfortunately, bulls don't talk and this one is quite content to just munch away at the grass. If only you could get its attention. Hey, toro, toro. Ole!

You can now explore the farm. Everything here seems pretty useless, but don't be fooled (as I was). The trowel CAN be used to dig up something interesting – providing the soil is soft enough. If you've got the trowel, then you've also got that pesky mouse running around your feet. You'll have to get rid of it before continuing or it will lead to your downfall. (Maybe it's hungry?)

Once you're finished at the farm, head north to the log cabin and then to the cliff. If you were thorough in your pilfering of the village, you should have the means to climb the cliff. (This game really ropes you in doesn't it? You should be well and truly hooked by now.) Once again, save the game before scaling the cliff, as there is no return to this section.

You should now be on a ledge confronted by the inevitable cave. Make sure you examine the cave thoroughly, then follow the ledge to the peak of the mountain. You've now reached your objective. Oh no! The frozen body of your contact! The poor fellow must have suffered a gruesome death. What will you do now without further instructions? It's time to go it alone! The only way is down, but jeez that snow looks deep. I hope you learnt more than how to make gluwein and chase snow bunnies during your holiday in St. Moritz.

When you get to the bottom of the mountain, you may want to save the game again, for you are now entering General Garantz's territory and all exits (other than the way you came) lead to instant death. It's time for a little patience. If you wait around awhile, one of General Garantz's jeeps will drive along the road. In fact, they pass by at fairly frequent intervals and could prove to be your salvation. Maybe you could use some of the objects that you've been carrying around for so long. Why not have a drink while you think about it. How about a cocktail like your friend Molotov used to make? Shaken, not stirred. Incidentally, there is a nasty bug at this point in the game. Do not try going IN unless you've actually got a jeep to get in to!

It's now time for a leisurely drive in the countryside, but make sure you've got a disguise before going on. Admire the scenery by all means, but don't get out of the vehicle. The wildlife has fangs of polished steel! What's this? A checkpoint? I hope you know the password, because that guard looks terribly trigger happy.

A little bit further and you're safely inside Garantz's base, but don't drive too far or you'll find yourself as a road crash statistic. Once you're out of the vehicle, it's only a couple of moves to ... the maze of large black rooms!

Oh boy, this one's a doozy. I spent two nights mapping the maze compared to three nights solving the rest of the game! By the time the whole maze was mapped, then painstakingly redrawn in its simplest possible form, I had made the following discoveries. There are 16 rooms in the maze. Each room has 12 exits (i.e. N, S, E, W, U, D, I, O, NE, SE, NW and SW) for a total of 156 exits. The maze can best be represented as a matrix of four rooms by four rooms. The exits from each room will lead only to the same room or one of the immediately adjoining rooms, including diagonals. Thus a corner room's exits will lead to only four possible rooms (including itself), a side room's exits will lead to only six possible rooms (including itself) and a centre room's exits will lead to only nine possible rooms (including itself). There was only one exit which broke this rule. Even knowing all this, mapping is not easy because going (say) east from one room does not necessarily mean that you can return by going west. Also, many exits are one directional.

You first enter the maze in the room at the upper right hand corner of the matrix. The hard part is finding the room which leads out. It's extremely unlikely that you'll find this room just by stumbling around. The maze is very cleverly constructed so that the closer you get to the exit, the more unlikely you are to actually reach it. You can map the maze using the traditional Hansel and Gretel method of dropping items to make each room unique, but you'll be hard pressed to find 16 items. Here's where your deductive logic and the above notes may help. (In fact, it IS possible to collect 16 items, but not until you've found your way through the maze! It's like the classic problem of which comes first, the chicken or the egg?)

After I'd finished the game, I discovered that there's actually a sign which TELLS YOU THE CORRECT PATH THROUGH THE MAZE! However, it was a bit cryptic and so completely unexpected that I'm not surprised that I didn't see its relevance at the time. The recommended path takes seven moves, but if you map the maze properly, you'll find a slightly shorter route which takes only six moves.

When you finally surface from the maze, you'll find yourself deep in the bowels of General Garantz's military base. There are lots of corridors, bunkers, catwalks, service rooms, platforms and missile hangars to explore, but very little to do. Don't worry about the employees wandering about the base. They will not bother you as long as you're still wearing your disguise.

You will eventually encounter a pair of locked doors. The first requires a code number which you should know if you've done everything that your contact told you to do. (Note that when you type in the code number, you shouldn't use spaces, commas, dashes or any other separators between the numbers. If you do, you'll get killed.) The second door requires only a bit of brute force – and the right object.

Well, at long last you're face to face with General Garantz. Remember your mission and act quick – you've only got one move to get the job done. And make sure you do it properly. Of the two means of assassination available to you, only one leads to a successful conclusion. The other is the biggest red herring of the whole game!

TIME TO GO

That's it for this issue. I hope that you found the playing strategies helpful. I can't remember the last time I received a letter from a PAGE 6 reader, nevertheless my usual invitation still applies. If you have any questions or comments about the column, suggestions for future columns or you just need a hint for a specific Adventure, please feel free to write. If writing from anywhere outside Australia and you expect a reply, please include two international reply coupons to cover the return postage.

Write to me, **Garry Francis** at **26 Baringa Road, Earlwood, N.S.W. 2206, Australia**

Zapping The Right Byte

Are those games too hard? Cheat! Harvey Kong Tin shows you how!

I enjoy playing Arcade Games as a form of entertainment and while there have been some excellent games released, there have been many that, although playable, have been far too hard to complete. Have you completed SEA DRAGON, THE BLUE MAX, FORT APOCALPYSE, MINER 2049'er, SNOKIE, LASER HAWK, BOULDERDASH, BOULDERDASH II, and BRUCE LEE without cheating? I have. Have you completed DRELBS, ASTROCHASE, TAIL OF BETA LYRAE, DEATHZONE, SHAMUS II, KISSIN' KOUSINS, and DIAMONDS? I have, but had to resort to cheating!

This article gives you guidelines about how to conquer certain games by changing the number of lives to 50, 100 or, if possible, the maximum of 255 lives. You will need a suitable disk editor, and reference to the chart accompanying this article. Unfortunately I can only recommend this information for disk users. I don't know of a suitable cassette editor, and there are the added hassles of cassette copy protection (which I think is impossible for a byte editor to handle?), plus the long time involved with re-saving the changed program. My information is only approximate and you may require several tries to zap the right byte. So be patient and be careful!

Before you start zapping, I have to issue the warning that you are responsible for your own actions once you start editing bytes on your own disks. You do so at your own risk. I will not be held responsible, nor will PAGE 6, if you zap the wrong byte, and can't change it back to the original!

HOW I DISCOVERED THE SECRETS

I have no knowledge of Assembly/Machine Code programming, but I looked at the source codes of FIREBUG and PLANETARY DEFENSE from ANALOG Magazine and saw how the lives were initialised. In PLANETARY DEFENSE, it was with LDA #4, i.e. load 4 into the accumulator. On disk, this would appear as A9 04, but it is possible of course that this combination of bytes would appear several times during the program, and only one of them would control the lives. So, it was a matter of trial and error to narrow down which is the right byte. Although it is possible for a programmer to set the lives with a LDX command I have found it rare, only FIREBUG used LDX, and I presume using LDY is possible too? LDX appears as A2 and LDY as A0 on the disk. In all the changes I have made in commercially released games, LDA was used for setting up the lives.

If a game has 3 lives, I checked for A903, or A904, or A902. There are several different ways a programmer may decide to count down the lives. Also, it is possible that the programmer may decide not to use LDA to set the lives at all. In that case, I have to give up the search, because I don't know what other options there are to look for. There are programs which I can't add extra lives to e.g. DOMAIN OF THE UNDEAD, PANIC EXPRESS, FLIP & FLOP and others.

HOW TO ZAP 'EM YOURSELF

Right, have you got your sector editor handy? Some are very easy to use, once you get use to zapping a few bytes. For convenience, you need one that has a HEX SEARCH, a MODIFY (so that you can make the change and write the changed sector to the disk) and other extras that are useful, are an ATASCII search and HEX and DEC convert.

Before you zap, take note of the original byte, and it's exact location, so that you can change it back to it's former self, in case anything goes wrong. One fail-safe way, is to only zap a copy if you are able to make one, because it is remotely possible that if copy protection is in the sector you zap, you would zap out the protection and won't be able to load the program.

USING THE TABLE

Use the HEX SEARCH to find the reference bytes given, e.g. A903, to find out where it is on your disk, they should be at the location given but check first. Always keep a note of what the original byte was and where it was, before you change it. In the example of A903 you would change 03 to the number of lives you want. Remember it is in hexadecimal and the maximum of lives possible is 255 i.e. FF. In some cases using a large number of lives will disrupt the screen display too much, and recommend the maximum limits shown in the chart. Have fun!

FOOTNOTE

I do have a great respect for the programmers who have written the games, but I can't help thinking that in some cases they set the difficulty far too high. Even with 255 lives, some games are still too hard to successfully finish. Playability is a very important part of any program, yet many games seem to have been inadequately play-tested to their conclusion. If the games could have been successfully completed with reasonable practice, I would have not bothered trying to add extra lives to the program.

The information is only approximate and maybe other readers could provide more accurate information for a future chart, when they try any of the above edits. And perhaps readers could send in information on games I have not covered?

EXTRA LIVES INFORMATION

Program	Occ.	Sect No.	Byte Loc.	(DD)	From	To
DROL		316	78	NO	A904	32
THRESHOLD		159	32	NO	A904	63
JUMPMAN		650	01	NO	A906	32
BELLUM		95	08	NO	A904	FF
MEDIATOR		145	0A	NO	A904	63
GHOSTCHASER	1st	3	C6	YES	A904	FF
OLLIES FOLLIES	1st	61	A8	YES	A904	FF
MONTEZUMA'S REVENGE	2nd	15		YES	A905	FF
FIREFLEET		17	15	YES	A904	FF
MATTERHORN		39		YES	A903	63
SHAMUS CASE II		8	35	YES	A904	FF
TAIL/BETA LYRAE		72		YES	A907	FF
KISSIN' KOUSINS		8		YES	A905	FF
DRELBS		17	08	YES	A905	FF

This applies to the version with Title animation only. Even with 255 lives it is still too hard to complete and I recommend disabling the missiles too.

Program	Occ.	Sect No.	Byte Loc.	(DD)	From	To
To disable missiles		16	F8	YES	A903	06
DEATHZONE		5		YES	A903	63
MOONSHUTTLE	9th	27		YES	A904	32
PINHEAD	1st	2	FC	YES	A905	63
ASTROCHASE	3rd	15	0F	YES	A903	FF
PREPPIE II	1st	1	2E	YES	A902	63
GUNLAW	3rd	159	01	YES	A903	63
QUASIMODO II	2nd	29	63	YES	A904	FF
SCOOTER	1st	53	D9	YES	A904	63
NEPTUNE'S DAUGHTERS	1st	46	F9	YES	A905	63
AIRSTRIKE	4th	24	CE	YES	A903	14
JETBOOT JACK	1st	35	3C	YES	A905	63
DIAMONDS	2nd	5	54	YES	A903	35
SNOKIE	12th	53	5D	YES	A903	28
VENUS VOYAGER2	3rd	18	A5	YES	A907	63
STEEPLEJACK	Last	53	BE	YES	A904	63
BATTY BUILDERS		2	AF	YES	A905	63
ELIMINATOR	1st	2	BD	YES	A906	32
BUSY BABY	4th	39	84	YES	A903	32
KID GRID	2nd	8	A2	YES	A905	63

This applies for the number of stuns, not lives

Program	Occ.	Sect No.	Byte Loc.	(DD)	From	To
CLOWNS AND BALLOONS		31	C2	YES	A903	14
STELLAR SHUTTLE	Last	27	F2	YES	A903	32

Occ. refers to which occurence of the byte combination to change. Where DD is YES, double the sector number if you are using Single/1050 Density. Please regard the Sector No. as approximate only. FF=255, 63=99, 32=50.

In the all the programs in the chart, LDA was used to set the lives. LDA=A9, remember not alter the A9, but the number that follows.

Storybook

by Allan Knopp

Enthral your children or your friends by making up your own illustrated stories with this easy to use program

Storybook will enable you to write and illustrate a story as a series of screens which can be saved to disk or cassette. The pictures are drawn in the top section of the screen, using a redefined character set in Antic mode 4 and each screen only takes eight sectors on disk, making loading very fast. If you are using cassette a screen will load in just under a minute. I wrote Storybook to be as simple to use as possible as I wanted it to be possible for children to use it, both young children by using the view option, and older children to be able to create their own stories. You should find it quite easy to use.

GETTING STARTED

When run the program will first present you with a brief list of the commands available. To begin creating screens just press START. If you want to view a previously saved series of screens then press SELECT. I will describe this option later.

After you press START the screen will clear and there will be a short pause while the character set is redefined. The new character set will then appear in the selection area at the base of the screen and a few seconds later the cursor will appear at the left of the selection area. You are now ready to create a screen. Any of the characters shown can be used to draw a picture.

Using a joystick, move the cursor to the character you require and press the fire button. Now move the cursor to the drawing area, press fire again and the character selected will be plotted on the screen. This character can be repeatedly plotted until it is changed by selecting another from the selection area.

CHANGING COLOURS

Colours can be changed while you are drawing. Press SELECT and then a number between 1 and 5 which corresponds to the colour register you wish to change (5 is the background), then push the joystick forward or back to cycle through the colours. Press START to continue drawing. You can also toggle between two of the colours (actually inverse and normal, but they appear differently in Antic 4). Press START to toggle the colours.

ADDING TEXT

When the picture is complete press OPTION to clear the text window. You can now type in up to five lines of story to go with your picture. You will find that the editing facilities are somewhat limited. This is because location 766 was poked with 1 to cause any control characters, for example Shift/Clear, to be printed to the screen rather than performing their editing functions. The Delete/Backspace key is the only editing facility available. Once you have completed the text for the screen press RETURN to save the screen to disk or cassette.

SAVING SCREENS

If you are saving to cassette just answer C to the filename prompt. If you are saving to disk, give the filename as D:filename.STO, 'filename' should not be more than *seven* letters long and the extension STO is needed for the screens to be loaded from disk. Again, because of the lack of editing facilities, if you should type the wrong filename you will not be able to correct it. However, unless the first letter is either D or C the filename will not be accepted, and on pressing RETURN the prompt will reappear and you will be able to enter the correct filename.

If you are saving to cassette, save the screens one immediately after the other on the tape in the order that they are to be viewed. If you are saving to disk, it is important to save them to a newly formatted disk in the order that they are to be viewed. Although each screen takes up only 8 sectors, only one story per disk is allowed as the program does not at present check filenames, it assumes that all files with the extender .STO are to be loaded in the order that they have been saved to the disk. In theory over 80 screens could be saved to disk but DOS has a directory limit of 64 filenames. It is suggested that you keep to a maximum of 60 screens which will then allow you to have DOS.SYS, DUP.SYS (if required) plus an AUTORUN.SYS file and the STORYBOOK program or the STORYBOOK READER from this issue's disk.

LOADING SCREENS

To load a previously saved screen for further editing, first open the text window by pressing OPTION, then press ESCAPE and enter either C or D:filename.STO in response to the prompt, depending on whether you are using cassette or disk.

READING A BOOK

Storybook gives the option of displaying previously saved screens in sequence. To do this, first run the program and when the instruction screen appears press SELECT. The first screen will appear, and subsequently pressing any key will load and display the next picture in the sequence.

```
EI 1 REM ********************************
YG 2 REM *         STORYBOOK            *
RQ 3 REM *             by               *
IS 4 REM *        ALLAN KNOPP           *
EC 5 REM * ---------------------------- *
IZ 6 REM *  PAGE 6 MAGAZINE - ENGLAND   *
EO 7 REM ********************************
QM 100 REM
MY 110 GRAPHICS 0:POKE 559,0:GOSUB 1695
UU 115 GOSUB 1530
HS 120 POKE 622,1
YJ 125 POKE 752,1:POKE 709,30
QO 130 GOSUB 1540:POKE 559,34:GOTO 1580
XS 135 GOSUB 735
PB 140 POKE 756,CHSET/256:IF PIX=1 THEN F
   OR I=708 TO 712:POKE I,0
JW 145 FOR X=32 TO 96:A$(X-31+ST)=CHR$(X+
   ST):NEXT X:FOR X=0 TO 31:A$(X+65+ST)=C
   HR$(X+ST):NEXT X
HF 150 FOR X=97 TO 127:A$(X+ST)=CHR$(X+ST
   ):NEXT X:IF ST=128 THEN 160
UU 155 ST=128:GOTO 145
FN 160 DL=PEEK(560):DH=PEEK(561):D=PEEK(5
   60)+256*PEEK(561)
SA 165 POKE D+3,68:FOR X=6 TO 28:POKE D+X
   ,PEEK(D+X)+2:NEXT X
WH 170 POKE 708,178:POKE 709,42:POKE 710,
   118:POKE 711,36
YQ 175 GOSUB 385
JK 180 X1=59:Y1=91
VW 185 GOSUB 1450
TT 190 REM * SWITCH COLOURS *
JZ 195 PK=PEEK(53279)
BN 200 IF PK=6 THEN GOSUB 385
FR 205 IF PK=5 THEN GOTO 450
LW 210 REM * PRESS OPTION TO TYPE *
HO 215 IF PK=3 OR PIX=1 THEN GOTO 420
OA 220 REM * MOVE CURSOR *
IJ 225 S=STICK(0)
SN 230 IF S=14 THEN Y1=Y1-4:GOSUB 335
QX 235 IF S=13 THEN Y1=Y1+4:GOSUB 335
PV 240 IF S=11 THEN X1=X1-4:GOSUB 335
TJ 245 IF S=7 THEN X1=X1+4:GOSUB 335
SM 250 IF STRIG(0)=0 THEN GOSUB 365
CH 255 POKE 77,0:GOTO 195
OQ 260 POKE 54286,192
WV 265 CLOSE #1:OPEN #1,4,0,"K:":POKE 755
   ,0
WO 270 IF PIX=1 THEN CLOSE #1:DIR=7:IO=4:
   GOSUB 535
YL 275 POSITION IC,IR:GET #1,R
OE 280 IF R=27 THEN CLOSE #1:DIR=7:IO=4:G
   OTO 535:REM * IF ESCAPE THEN LOAD SCRE
   EN *
GE 285 IF R=125 THEN 1390:REM * IF SHIFT/
   CLEAR THEN CLEAR SCREEN *
TV 290 IF R=155 THEN CLOSE #1:DIR=11:IO=8
   :GOSUB 515:REM * IF RETURN THEN SAVE S
   CREEN *
UM 295 IF R=127 THEN GOSUB 440:GOSUB 1470
   :GOTO 195:REM * IF TAB PRESSED THEN RE
   PLACE GRAPHICS SYMBOLS *
ZE 300 IF R=126 AND IC>3 THEN IC=IC-1:GOS
   UB 330:GOTO 325
GZ 305 IF R=126 AND IC<=3 AND IR>17 THEN
   IR=IR-1:IC=36:GOSUB 330:GOTO 275
ZH 310 IF R>=32 AND R<=122 AND IR<22 THEN
    PRINT CHR$(R)
XZ 315 IF IR<22 AND IC<37 THEN IC=IC+1
RD 320 IF IC>36 THEN IR=IR+1:IC=3
BE 325 POSITION IC,IR:? "_":GOTO 275
LX 330 POSITION IC,IR:? "  ":RETURN
CD 335 IF X1<59 THEN X1=59:RETURN
LZ 340 IF X1>195 THEN X1=195:RETURN
YE 345 IF Y1<19 THEN Y1=19:RETURN
XT 350 IF Y1>103 THEN Y1=103:RETURN
ZB 355 X=USR(MOVE,0,PMB,PMD,X1,Y1,6)
NK 360 SOUND 0,10,12,6:FOR W=1 TO 6:NEXT
   W:SOUND 0,0,0,0:RETURN
XU 365 XX1=(X1-48)/4:YY1=(Y1-16)/4
HU 370 IF Y1>=83 THEN LOCATE XX1,YY1,Z
FI 375 IF Y1<=79 THEN POSITION XX1,YY1:?
   CHR$(Z):RETURN
HO 380 POSITION XX1,YY1:? CHR$(Z):SOUND 0
   ,20,12,8:FOR W=1 TO 10:NEXT W:SOUND 0,
   0,0,0:RETURN
```

FURTHER INFO

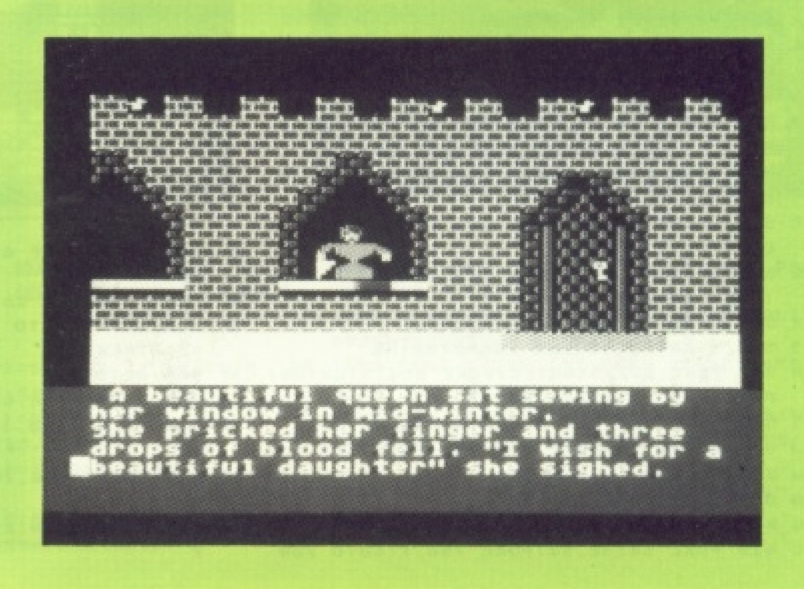
When the text window is open the entire screen can be cleared by pressing Shift/Clear. The text window can be closed and the graphics selection area returned by pressing TAB. Please note that any type in the text window will be erased when you do this.

I have included a character set which I hope should be suitable for most purposes. If you wish to change it, the data for the new characters begins at line 810. Don't change the first number of each line, just the other eight.

The pictures produced by Storybook are somewhat blocky, but I chose to use a redefined character set for two reasons. Firstly it makes creation of a screen very quick and easy and secondly it makes saving and loading much faster, particularly when using cassette.

I have used routines from elsewhere in the program. The loading and saving routines are based on Ian Finlayson's Slideshow program from Page 6 issue 20. The display list interrupt which restores the normal character set and sets the colour of the text window was accomplished using DLI Maker by Greg Anderson, which was published in Analog No. 38.

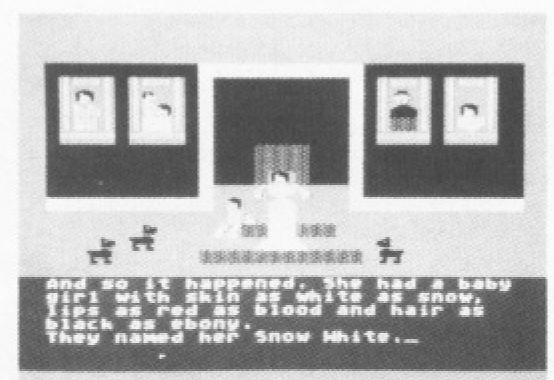




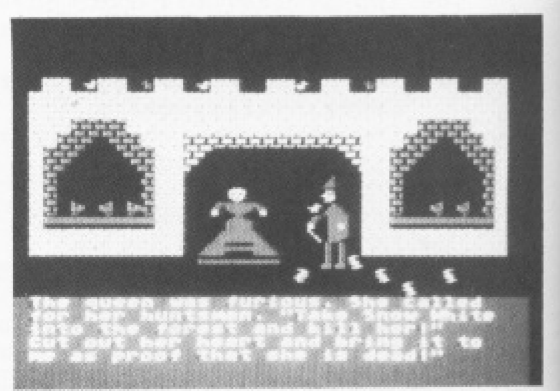
DISK BONUS

This issue's disk contains a double bonus – a separate program called STORYBOOK READER plus a complete story of Snow White and the Seven Dwarfs. With STORYBOOK READER you can read any story disk created with STORYBOOK and create stand alone disks for your children and friends. The disk is available from PAGE 6 at the usual price of £3.95.

```
UK 385 IF CHNGE=0 THEN CHNGE=1:GOSUB 400:RETURN
UU 390 IF CHNGE=1 THEN CHNGE=0:GOSUB 410:RETURN
AG 395 RETURN
TR 400 POKE 766,1:POSITION 3,17:? A$(1,32):POSITION 3,18:? A$(33,64):POSITION 3,19:? A$(65,91)
GB 405 POSITION 3,20:? A$(93,124):RETURN
PO 410 POKE 766,1:POSITION 3,17:? A$(1+ST,32+ST):POSITION 3,18:? A$(33+ST,64+ST):POSITION 3,19:? A$(65+ST,91+ST)
IC 415 POSITION 3,20:? A$(93+ST,124+ST):RETURN
LR 420 SCREEN=PEEK(88)+256*PEEK(89):X1=2:GOSUB 1495
QQ 425 FOR X=22 TO 28:POKE D+X,PEEK(D+X)-2:NEXT X:FOR X=683 TO 990:POKE SCREEN+X,0:NEXT X
HZ 430 IC=3:IR=17:IF LD=0 AND TB=0 THEN GOSUB 1670
TC 435 POKE 54286,192:POKE 257,128:POKE 559,34:GOTO 265
LW 440 POKE 54286,64:FOR X=22 TO 28:POKE D+X,PEEK(D+X)+2:NEXT X:FOR X=683 TO 990:POKE SCREEN+X,0:NEXT X:GOSUB 385
ZX 445 RETURN
```




```
NG 450 REM * COLOUR CHANGE *
PL 455 SOUND 0,10,10,10:FOR W=1 TO 30:NEXT W:SOUND 0,0,0,0
YQ 460 CLOSE #2:OPEN #2,4,0,"K:"
LB 465 GET #2,R
UL 470 IF R<49 OR R>53 THEN 460
MM 475 COL=PEEK(708+(R-49)):S=STICK(0)
II 480 S=STICK(0)
UB 485 IF S=14 THEN COL=COL+1:IF COL>255 THEN COL=1
JY 490 IF S=13 THEN COL=COL-1:IF COL<1 THEN COL=255
QJ 495 POKE 708+(R-49),COL
NK 500 IF PEEK(53279)=5 THEN 455
MR 505 IF PEEK(53279)=6 THEN 255
RX 510 GOTO 475
AX 515 REM * SCREEN SAVE AND LOAD -BASED ON SLIDESHOW BY IAN FINLAYSON -PAGE 6 ISSUE No.20 *
WW 520 TRAP 635:POSITION 0,22:? " FILENAME TO SAVE-";
IT 525 INPUT F$:IF F$(1,1)<>"D" AND F$(1,1)<>"C" THEN GOSUB 630:GOTO 520
MP 530 GOSUB 630:GOTO 555
JK 535 IF PIX=1 THEN 655
WL 540 TRAP 635:POSITION 0,22:? " FILENAME TO LOAD-";
IN 545 IF PIX=1 THEN 690
YH 550 INPUT F$:IF F$(1,1)<>"D" AND F$(1,1)<>"C" THEN GOSUB 630:GOTO 535
QB 555 POKE 559,0:GOSUB 630:OPEN #1,IO,0,F$
FE 560 IF IO=8 THEN FOR I=0 TO 4:PUT #1,PEEK(708+I):NEXT I
ED 565 IF IO=4 THEN FOR I=0 TO 4:GET #1,A:POKE (708+I),A:NEXT I
TX 570 STARTHB=INT(SCREEN/256)
FS 575 STARTLB=SCREEN-256*STARTHB
KX 580 POKE 852,STARTLB:POKE 853,STARTHB:POKE 856,111:POKE 857,3
ES 585 POKE 850,DIR:A=USR(ADR(ML$),16)
IJ 590 CLOSE #1:POKE 764,255:POKE 559,34
GU 595 IF PIX=1 THEN 615
AB 600 LD=1
JO 605 IC=3:IR=17
QC 610 POKE 54286,64:POKE 766,1:GOTO 260
MJ 615 IF PEEK(764)<>255 THEN POKE 764,255:POSITION 0,22:? "                    ":GOTO 695
NE 620 REM * FOR CASSETTE ONLY - CHANGE LINE 615 GOTO 695 BECOMES GOTO 655
QV 625 GOTO 615
RB 630 POSITION 0,22:? "                    ":RETURN
BZ 635 POSITION 0,22:? "ERROR-";PEEK(195);" AT LINE ";PEEK(186)+256*PEEK(187);"  "
LT 640 TRAP 40000:FOR X=1 TO 400:NEXT X:POSITION 0,22:? "                    ":CLOSE #1:IF R=27 THEN 535
OS 645 GOTO 520
RB 650 REM * SHOW *
MB 655 CLOSE #1
SK 660 REM * FOR CASSETTE DELETE 665 to 705- REPLACE 655 WITH 655 CLOSE #1:TRAP 710:F$="C:":GOTO 555
EO 665 OPEN #1,6,0,"D:*.STO":Z=0
KK 670 INPUT #1,C$:Z=Z+1:B$(17*Z-16,17*Z)=C$:IF C$(5,8)="FREE" THEN 685
RL 675 GOTO 670
ZV 680 CLOSE #1:IF Z=1 THEN 730
ID 685 CLOSE #1:GOTO 545
JG 690 Z=0
NG 695 TRAP 710:Z=Z+1:C$=B$(17*Z-16,17*Z)
KL 700 F$(3,14)=C$(3,14):FOR N=4 TO 10:IF F$(N,N)=" " THEN F$(N,N+3)=".STO"
NU 705 NEXT N:GOTO 555
VK 710 TRAP 40000:Z=0:POSITION 0,22:? "  That is the end of this story."
SJ 715 FOR W=1 TO 300:NEXT W:POSITION 0,22:? "    Press any key to read it again."
YV 720 REM * FOR CASSETTE REPLACE 715 WITH 715 FOR W=1 TO 300:NEXT W:POSITION 3,23:? "Rewind, RESET & RUN":END
AC 725 Z=0:GOTO 615
YZ 730 POSITION 0,22:? "NO STORYBOOK FILES ON THIS DISK":FOR W=1 TO 100:NEXT W:RUN
UR 735 REM * CHSET REDEFINITION ROUTINE *
PC 740 POKE 106,PEEK(106)-16:GRAPHICS 0:CHSET=(PEEK(106)+4)*256:POKE 710,130
OK 745 IF PEEK(258)=100 THEN RETURN
PX 750 POKE 258,100
XR 755 POSITION 3,18:? "Please wait.....":POSITION 3,19:? "Redefining character set"
JI 760 CHI=CHSET/256:CLO=0:POKE 203,CLO:POKE 204,CHI:POKE 755,0
XP 765 DIM XFR$(28):RESTORE 770:FOR N=1 TO 28:READ ML:XFR$(N,N)=CHR$(ML):NEXT N
NO 770 DATA 104,169,0,133,205,168,169,224,133,206,177,205,145,203,200,208
TJ 775 DATA 249,230,204,230,206,165,206,201,228,208,239,96
JU 780 XFR=USR(ADR(XFR$))
WH 785 RESTORE 810
KG 790 READ A:IF A=-1 THEN POKE 752,1:RETURN
UP 795 POSITION 28,19:? 127-A;" "
GC 800 FOR Z=0 TO 7:READ J:POKE CHSET+A*8+Z,J:NEXT Z
SF 805 GOTO 790
JU 810 DATA 1,60,63,59,35,171,43,11,35
UV 815 DATA 2,60,252,236,200,234,232,224,40
OQ 820 DATA 3,60,255,239,200,234,234,226,8
NI 825 DATA 4,60,255,191,35,171,171,136,32
OW 830 DATA 5,0,63,239,136,170,42,34,8
RF 835 DATA 6,0,252,251,34,170,168,136,32
NI 840 DATA 7,0,63,59,35,170,42,10,40
GG 845 DATA 8,0,252,236,200,234,168,160,40
AS 850 DATA 9,63,63,200,170,170,34,34,8
GA 855 DATA 10,252,252,35,170,170,136,136,32
RW 860 DATA 11,15,15,50,42,42,8,8,2
JJ 865 DATA 12,192,192,48,160,160,128,128,0
WF 870 DATA 13,15,63,59,50,58,58,8,2
RU 875 DATA 14,192,240,240,48,176,176,128,0
EE 880 DATA 15,60,15,15,60,63,252,48,60
NT 885 DATA 16,0,12,15,252,60,60,0,0
VO 890 DATA 17,0,16,80,21,20,20,0,0
EU 895 DATA 18,60,240,240,60,252,60,15,60
II 900 DATA 19,170,170,170,170,170,170,170,170
```

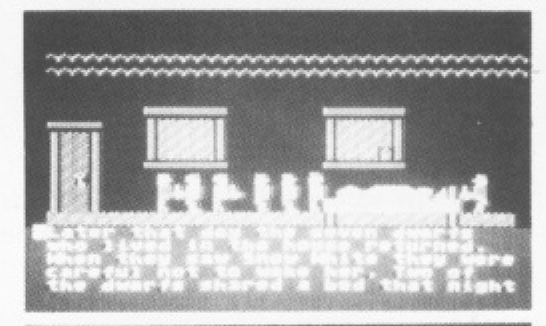


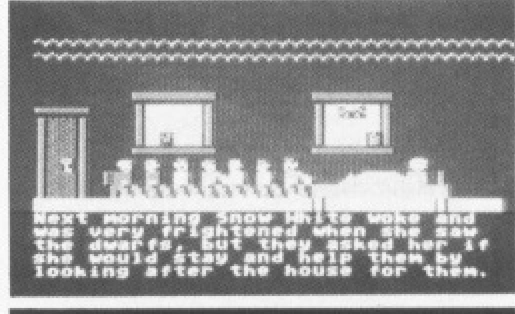
```
PE 905 DATA 20,255,255,255,255,255,255,255,255
ZG 910 DATA 21,85,85,85,85,85,85,85,85
IP 915 DATA 22,170,170,42,42,10,10,2,2
BG 920 DATA 23,170,170,168,168,160,160,128,128
HZ 925 DATA 24,255,255,63,63,15,15,3,3
VW 930 DATA 25,255,255,252,252,240,240,192,192
EC 935 DATA 26,85,85,21,21,5,5,1,1
IF 940 DATA 27,85,85,84,84,80,80,64,64
QQ 945 DATA 28,136,34,136,34,136,34,136,34
WI 950 DATA 29,204,51,204,51,204,51,204,51
LA 955 DATA 30,68,17,68,17,68,17,68,17
VA 960 DATA 31,12,12,63,51,59,51,59,63
LM 965 DATA 32,5,21,20,84,80,160,160,160
FA 970 DATA 33,20,20,20,20,20,40,40,40
MM 975 DATA 34,64,80,84,21,21,10,10,10
AO 980 DATA 35,85,85,85,85,85,105,105,105
JY 985 DATA 36,255,255,255,255,255,235,235,235
BM 990 DATA 37,2,10,42,170,170,170,170,170
RK 995 DATA 38,128,160,168,170,170,170,170,170
FE 1000 DATA 39,3,15,63,255,255,255,255,255
QM 1005 DATA 40,192,240,252,255,255,255,255,255
UZ 1010 DATA 41,1,5,21,85,85,85,85,85
OS 1015 DATA 42,64,80,84,85,85,85,85,85
OZ 1020 DATA 43,170,170,170,170,170,42,10,2
CO 1025 DATA 44,170,170,170,170,170,168,160,128
VH 1030 DATA 45,255,255,255,255,255,63,15,3
NP 1035 DATA 46,255,255,255,255,255,252,240,192
JH 1040 DATA 47,85,85,85,85,85,21,5,1
ME 1045 DATA 48,85,85,85,85,85,84,80,64
BZ 1050 DATA 49,0,128,128,160,160,168,168,170
BZ 1055 DATA 50,0,2,2,10,10,42,42,170
NL 1060 DATA 51,0,192,192,240,240,252,252,255
YQ 1065 DATA 52,0,3,3,15,15,63,63,255
HM 1070 DATA 53,0,64,64,80,80,84,84,85
HR 1075 DATA 54,0,1,1,5,5,21,21,85
BW 1080 DATA 55,0,170,170,170,170,0,0,0
RW 1085 DATA 56,0,255,255,255,255,0,0,0
```

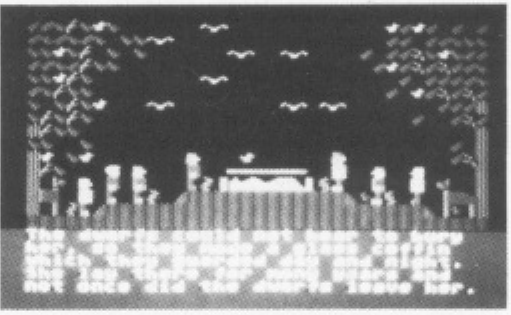
```
YN 1090 DATA 57,0,85,85,85,85,0,0,0
XW 1095 DATA 58,0,0,170,170,170,0,0,0
HR 1100 DATA 59,0,0,255,255,255,0,0,0
FR 1105 DATA 60,0,0,85,85,85,0,0,0
UG 1110 DATA 61,0,0,0,170,170,0,0,0
CW 1115 DATA 62,0,0,0,255,255,0,0,0
RW 1120 DATA 63,0,0,0,85,85,0,0,0
GJ 1125 DATA 64,20,20,85,85,85,85,20,20
XU 1130 DATA 65,21,21,21,21,21,21,21,21
PU 1135 DATA 66,84,84,84,84,84,84,84,84
NT 1140 DATA 67,60,60,60,60,60,40,40,40
MR 1145 DATA 68,12,12,63,63,63,63,63,63
PB 1150 DATA 69,5,5,21,20,20,20,252,252
WI 1155 DATA 70,80,80,84,20,20,20,63,63
TN 1160 DATA 71,3,15,243,255,255,63,0,15
CN 1165 DATA 72,65,0,20,20,20,20,0,65
XN 1170 DATA 73,130,0,40,40,40,40,0,130
JN 1175 DATA 74,192,240,207,255,255,252,0,240
JK 1180 DATA 75,10,10,10,10,10,10,10,10
JC 1185 DATA 76,160,160,160,160,160,160,160,160
XR 1190 DATA 77,15,15,15,15,15,15,15,15
AX 1195 DATA 78,240,240,240,240,240,240,240,240
BM 1200 DATA 79,5,5,5,5,5,5,5,5
IF 1205 DATA 80,80,80,80,80,80,80,80,80
VE 1210 DATA 81,0,0,0,170,170,0,0,0
TL 1215 DATA 83,0,0,0,85,85,0,0,0
YA 1220 DATA 84,0,64,80,84,21,21,4,0
VV 1225 DATA 85,0,1,5,21,84,84,16,0
WM 1230 DATA 86,0,0,48,204,3,3,0,0
JV 1235 DATA 87,0,0,12,51,192,192,0,0
DV 1240 DATA 88,0,8,8,128,34,10,10,170
IC 1245 DATA 89,0,32,32,2,136,160,160,170
LS 1250 DATA 90,48,48,60,12,12,60,48,48
JP 1255 DATA 91,0,0,255,243,243,243,255,240
GS 1260 DATA 92,195,195,60,60,60,60,195,195
PY 1265 DATA 93,85,65,85,65,85,65,85,65
QN 1270 DATA 94,255,195,255,195,255,195,255,195
LO 1275 DATA 95,0,3,15,63,252,252,48,0
IM 1280 DATA 96,60,255,255,255,255,255,255,60
PX 1285 DATA 97,10,10,10,10,10,63,63,63
BG 1290 DATA 98,40,40,40,40,40,63,63,63
YN 1295 DATA 99,20,20,20,20,20,252,252,252
BU 1300 DATA 100,80,80,80,80,80,124,124,124
MB 1305 DATA 101,10,10,10,40,40,40,252,252
DL 1310 DATA 102,160,160,168,40,40,40,63,63
LV 1315 DATA 103,63,63,63,63,12,12,60,60
YD 1320 DATA 104,255,255,252,252,12,12,60,60
AQ 1325 DATA 105,255,255,63,63,48,48,60,60
RV 1330 DATA 106,252,252,252,252,48,48,60,60
VI 1335 DATA 107,40,40,40,40,40,40,40,40
KW 1340 DATA 108,60,60,60,60,60,60,60,60
GT 1345 DATA 109,20,20,20,20,20,20,20,20
BW 1350 DATA 110,191,191,170,251,251,251,170,191
FA 1355 DATA 111,191,191,170,11,11,11,10,2
GY 1360 DATA 112,63,63,0,243,243,243,0,63
TC 1365 DATA 113,63,63,0,240,240,240,0,0
TB 1370 DATA 114,63,63,0,3,3,3,0,0
VK 1375 DATA 115,252,204,252,48,48,48,60,60
ER 1380 DATA 116,3,3,12,12,48,48,192,192
SO 1385 DATA 117,192,192,48,48,12,12,3,3
EO 1390 DATA 118,1,1,5,4,20,16,80,64
WG 1395 DATA 119,64,80,16,20,4,5,1,1
PD 1400 DATA 120,170,10,10,34,128,8,8,0
TN 1405 DATA 121,169,160,160,136,2,32,32,0
WG 1410 DATA 122,32,32,32,20,85,85,85,20
RW 1415 DATA 123,15,12,48,63,252,240,192,192
OG 1420 DATA 124,192,48,12,12,255,63,3,3
WP 1425 DATA 125,88,0,125,0,0,0,0,0
TF 1430 DATA 126,0,0,0,0,0,0,0,0
UM 1435 DATA 127,0,0,0,0,0,0,0,0
EY 1440 DATA -1
EE 1445 POKE 766,0:? "K":GOTO 600
SJ 1450 REM * P.M.MOVE ROUTINE TOM HUDSON ANALOG COMPENDIUM *
ON 1455 RESTORE 1505
AM 1460 DIM PMMOV$(100),P0$(30):MOVE=ADR(PMMOV$):FOR X=1 TO 100:READ N:PMMOV$(X)=CHR$(N):NEXT X
WO 1465 FOR X=1 TO 6:READ N:P0$(X)=CHR$(N):NEXT X
TD 1470 PMBASE=INT((PEEK(145)+3)/4)*4:POKE 54279,PMBASE
KR 1475 PMB=PMBASE*256
AM 1480 PMD=ADR(P0$)
BY 1485 POKE 559,46:POKE 53277,3
UK 1490 POKE 704,14
DB 1495 X=USR(MOVE,0,PMB,PMD,X1,Y1,6)
AJ 1500 RETURN
MT 1505 DATA 216,104,104,104,133,213,104,24,105,2,133,206,104,133,205,104,133,204,104,133,203,104,104,133,208
BL 1510 DATA 104,104,133,209,104,104,24,101,209,133,207,166,213,240,16,165,205,24,105,128,133,205,165,206,105
UC 1515 DATA 0,133,206,202,208,240,160,0,162,0,196,209,144,19,196,207,176,15,132,212,138,168,177,203,164
UG 1520 DATA 212,145,205,232,169,0,240,4,169,0,145,205,200,192,128,208,224,166,213,165,208,157,0,208,96
GV 1525 DATA 252,132,132,132,132,252
HM 1530 RESTORE 1535:FOR X=1 TO 7:READ A:ML$(X)=CHR$(A):NEXT X:RETURN
AV 1535 DATA 104,104,104,170,76,86,228
KJ 1540 REM * TITLE LINE *
PN 1545 RESTORE 1570
AL 1550 DL=PEEK(560):DH=PEEK(561):D=PEEK(560)+256*PEEK(561)
UC 1555 FOR Z=0 TO 26:READ B:POKE 1536+Z,B:NEXT Z
JR 1560 POKE 560,0:POKE 561,6:POKE 1541,DL+2:POKE 1542,DH:POKE DL+30,0:POKE DL+31,6
BV 1565 RETURN
OC 1570 DATA 112,70,7,6,1,0,0
QV 1575 DATA 0,0,0,0,0,115,116,111,114,121,98,111,111,107,0,0,0,0,0,0
YR 1580 REM * TITLE SCREEN *
CQ 1585 POKE 710,128:POKE 712,128:POKE 752,1:POSITION 2,10:? "          By Allan Knopp"
NH 1587 POKE 82,12:POSITION 12,18:? "START to create":? "SELECT to read":? "OPTION for help":GOTO 1650
VB 1590 ? :? "Move cursor to character block        press FIRE to pick up."
QV 1595 ? "Position cursor in drawing area        press FIRE to plot."
HY 1600 ? "START--Toggle colours":? "SELECT-Go to colour change routine"
KE 1605 ? "OPTION-To open text window"
YE 1610 ? "──────────────────────────────"
VA 1615 ? "When in colour change routine press   SELECT-Then 1-5 for another register   START -To return"
IG 1620 ? "JOYSTICK up or down to change colour"
ZB 1625 ? "──────────────────────────────"
OU 1630 ? "When text window is open press        RETURN-To save to Disk or Cassette    ESCAPE-To load a saved screen."
WN 1635 ? "TAB-To erase text & replace graphics"
GS 1640 ? "SHIFT/CLEAR-Together to erase screen":? "──────────────────────────────"
FW 1645 ? "      PRESS START TO CREATE PAGES ":? "              SELECT TO READ BOOK ":?
KT 1650 Z=0:POKE 82,2
BR 1655 IF PEEK(53279)=6 THEN ? "K":POKE 766,1:POKE 710,132:GOTO 135
HV 1660 IF PEEK(53279)=5 THEN PIX=1:? "K":POKE 766,1:POKE 710,134:GOTO 135
GG 1662 IF PEEK(53279)=3 THEN 1590
WL 1665 GOTO 1655
DN 1670 POKE 559,Z:RESTORE 1710:READ DNUM
BE 1675 D=PEEK(560)+256*PEEK(561)
JV 1680 FOR I=1 TO DNUM:READ B:POKE D+B,PEEK(D+B)+128:NEXT I
LP 1685 B=INT(ADR(DLI$)/256):A=ADR(DLI$)-B*256:POKE 512,A:POKE 513,B
RN 1690 POKE 54286,192:POKE 256,Z:POKE 559,46:TB=1:RETURN
SO 1695 DIM A$(260),F$(16),ML$(7),B$(510),YN$(1),C$(17),DLI$(22):F$(1,2)="D:":Z=0
AB 1700 DLI$="H[illegible]he"
BH 1705 RETURN
DP 1710 DATA 1,21
```

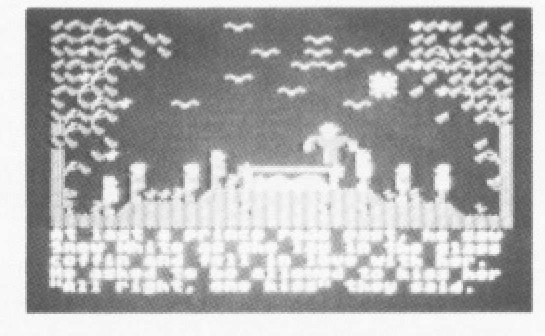












The First XLENT Word Processor
XLENT Software (UK)
£29.95

Reviewed by John S Davison

XLENT have been providing 8-bit users with interesting print related software for a while now, but this marks their first attempt at a comprehensive word processing package. My initial impressions are that it's a thoroughly practical piece of software with some unique features, and is good enough to give the established favourites like Atariwriter and Paperclip a real run for their money.

The program comes in the slim A5 size plastic wallet popular with many companies, and this contains an unprotected program disk plus a detailed 56 page instruction manual. Unfortunately, the manual isn't indexed, but otherwise seems well written and organised. The disk includes DOS 2.5, so the 130XE's ramdisk can be used, if required.

PRACTICAL DESIGN

While the program is by no means completely 'intuitive' in use, the author seems to have tried hard to make it nice to work with. He's included such features as variable background and text colours and intensities, choice of flashing block or underline cursor, selectable insert or overtype mode, and joystick or keyboard input for cursor movement and scrolling.

The main edit screen is divided into three areas, these being a tab/ruler line, a twenty line editing window, and a four line command window. The command window is used for status, prompt, and error messages from the program's various functions. It also contains six icons for selecting print, copy, cut, paste, search and disk utility functions. To use these you simply select the required icon and then follow the prompts appearing in the window alongside. It couldn't be easier.

Many of the prompts require a reply through the keyboard. The most frequently needed reply is already on screen as a default, so all you need do is hit Return. In the unlikely event of you getting stuck and not knowing what to do next, pressing the Esc key once or twice will return you to edit mode. Strangely, you don't usually return to your original position in the text, and sometimes find the typing mode has changed too. If you need even more assistance there are four help screens packed with useful information available at a push of the Help key.

Editing is very straightforward, with Cursor, Insert, Backspace, and Delete keys doing just what you'd expect. In fact, the operation of the Delete key has been augmented somewhat. Shift Delete brings up a menu in the command window, giving you the choice of deleting to end of word, line, sentence, or paragraph. Sensibly, the default is for line – again exactly what you'd expect.

Less frequently used functions are accessed by pressing Shift Control plus a third key. This permits operations such as counting words; turning wordwrap on and off; calculating number of disk sectors required to save the document; marking up to five distinct positions in the text and then jumping to any of them as required (VERY useful); changing cursor shape, background and text colour and intensity; key repeat and joystick response speeds; and highlighting all the additional spaces shown on the screen resulting from wordwrap or return characters.

A buffer is used to handle the copy, cut, and paste functions. It's only 800 bytes long though (one screen), which can sometimes be a limitation. Unusually, this buffer may be edited, so you can copy something into it, change it, and then paste the new version back into a document. You can also create new text in it, either by keying it directly or loading a file from disk.

HANDLE TWO DOCUMENTS

It's possible to copy, cut, and paste between two documents by using the program's dual window facility. This divides memory into two halves, and permits the loading and editing of a document in each part. The cut and paste buffer is shared between the two windows, giving the ability to move or copy text from one to the other.

Rather than having two small windows on the screen simultaneously, you flip between two full size windows. My only criticism of this is that the program resets the view to the start of the document each time you flip windows. It would be far better if it returned you to the point from which you left it.

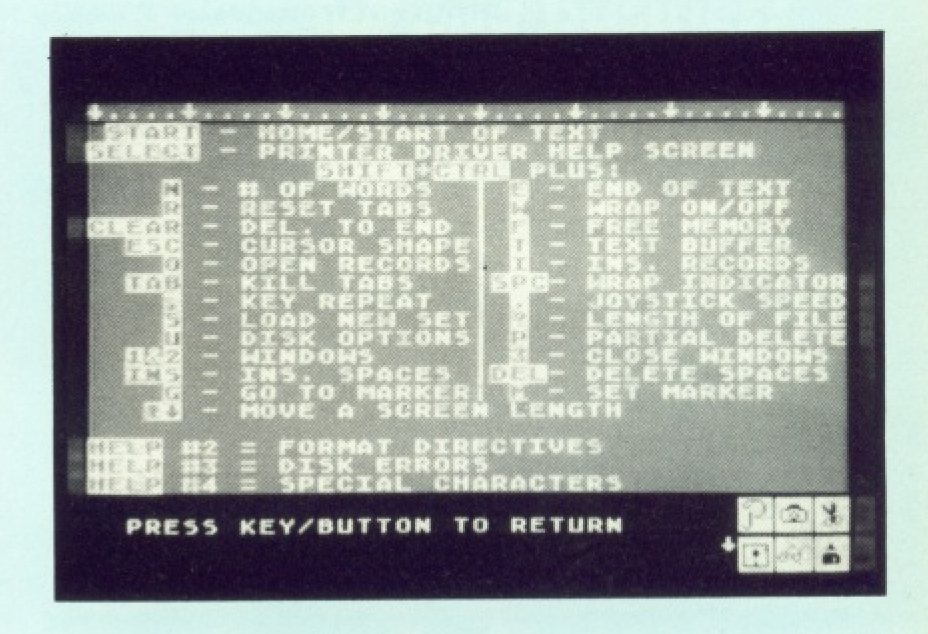
The usual selection of disk functions are included, such as directory, load, save, delete and format. Load options allow you to append files to the document in memory, or insert them at any point within it. Save options permit the saving of the whole file or any selected portion of it. Together, these give you another way of cutting and pasting between documents.

Yet another unusual feature is the disk to screen spool function. This allows you to read a file from disk and display it on the screen WITHOUT having to save the file already in memory. How many times have you wanted to have a quick look at a disk file because you've forgotten what's in it? Well now you can, and without the usual save, load, reload hassle.

The program is well endowed with text formatting features, implemented via directives. These are control codes placed on special format lines within the text. Facilities include left, right, top and bottom margin settings, physical and logical page size, immediate and conditional page eject, line spacing, centring, justification, three part headers and footers, normal and hanging indents, and page numbering. There are some unusual directives too. For example text blocks can be selectively skipped, output paused at chosen points, and separator lines printed.

Formatting includes the handling of hard spaces and soft hyphens. The first is used when you want to link two words together to prevent them being split across two lines. Soft hyphens may be put into long words to show where to break

‘good enough to give ... Atariwriter Plus and PaperClip a real run for their money’



and hyphenate them when they won’t fit onto a line. If the word does fit, the hyphens don’t appear. Clever stuff, this!

80 COLUMN PREVIEW

Output can be directed to printer, screen, or disk in single or double column format, with double column handled in a single pass, if required (XL/XE only).

Screen output is used for previewing printout. It’s produced in 80 column mode in a vertical scrolling 14 line window. The tiny special characters are quite legible (on my TV, anyway) and are perfectly adequate for preview purposes.

Disk output may be used for transferring formatted text to other programs, like XLEnt’s own Megafont package, or for bulletin board uploads.

Long documents can be built up from several files – chained together so they print as a single document. It’s also possible to include external files within the main body of a document. For instance, you could insert standard paragraphs into a document from a standard text library. There’s also a mailmerge feature for producing personalised standard letters.

CONTROL THAT PRINTER

Facilities for controlling your printer haven’t been forgotten either. The Atari international character set is supported and you can embed printer control characters in your text to handle the printer’s special features. You can also load in custom designed character sets, a sample being provided on the disk.

There’s also a printer driver construction set which allows you to set up your own control toggles for underlining, boldface, subscripts, and anything else your printer is capable of. You can even print graphics along with your text, but only on Epson compatible printers. Uncompressed 62 sector picture files, B/Graph picture files, or Typesetter (another XLEnt product) icons may be converted into printable bit image files using a utility provided.

There’s just one more feature I must mention, available only on the 130XE. This is a print spooler – not to be confused with the disk to screen spooler described earlier. This enables your Atari to print out a document while you get on with further editing of the same or another document. I found it slightly disappointing in that the printer runs slower than normal, and there’s a noticeable slowing of keyboard response when in use. No input gets lost though, as the program uses a type-ahead buffer. Using a Star SG10 printer on a Blackthorn interface, I found the printout occasionally stopped altogether, but could be restarted by pressing the BREAK key. OK, so it’s not 100% successful, but look on it as an interesting bonus.

GREAT VALUE

What can I say except this XLEnt product really lives up to its name! It’s friendly, reliable (apart from the odd idiosyncrasy), and chock full of useful features. The only extra items I’d like to see included are a good spell checker, automatic heading levels and table of contents generation – perhaps XLEnt will add these later. And if they wanted to be really innovative they could add an outline processor and thesaurus, too. Now that WOULD be something to shout about!

All in all this product represents great value for money. If you’re considering buying a word processor, make sure you see this one before you decide. I think you’ll like it. ●

Coming soon ...
Colossus 4 chess
Colleen Music Compendium

COMPUTER GAMMON – THE BUGS!

Fancy being a Bug-Hunter? Or doing a bit of Sherlock Holmes work? Dave Hitchens tried to track down a bug in his Computer Gammon program from Issue 27 only to find part of the solution. Can you throw any light on the problem?

Shortly after Computer Gammon was published in Issue 27, the Editor wrote to me and asked if I could sort out a bug. Apparently, 400/800 owners experienced a problem with the right hand die jiggling back and forth slightly – something which does not happen on the XL or XE. It turns out that this is one of those bugs that does not respond to conventional debugging techniques, in fact it's real weird!

FIRST THE FIX ...

Before going into the technicalities, let's have the cure, which involves modifying three lines, and while we're at it there are a couple of corrections to the scoring routines you might like to make. The cure for the jiggling is:

Line 1730 – alter the DATA
141,2,208,24,105,20,141,3,208 to
141,3,208,56,233,20,141,2,208.
Line 1760 – alter the 201,70 to 201,90
Line 2440 – alter the 70 to 90

For the scoring routine make the following changes:

Line 8045 – the (N < 6) should be (N < 7)
Line 8046 – the (N > 19) should be (N > 18)

... THEN THE MYSTERY!

Now to the Sherlock Holmes section!

The dice are represented by players 3 and 4, overwritten by substrings from DICE$ and their horizontal locations correspond to the value in location 1. Once initialised, this location holds '70' and is POKEd into memory location 53250. Adding 20 produces the value to POKE into address 53251. Now, because the program makes multiple use of both players and colour registers, I introduced three DLI's along with a VBI with the latter pulsing the colours and cursor etc. The positional instructions for the dice are contained in this VBI and could not be more simple viz: LDA 1, STA 53250, CLC, ADC#20, STA 53251. The XE accepts this routine and gives stable dice but the 400 doesn't! The left die is steady as a rock but the right one dithers.

It turns out that replacing the CLC/ADC instruction with LDA #90 cures the jiggling. In addition, using SBC #20 with either CLC or SEC also cures it. Finally, pressing the BREAK key stops the jiggling but the fault returns when CONT is typed or even if BASIC is sent into a tight loop (e.g. GOTO 5 where line 5 simply reads GOTO 5).

A memory location was chosen so as to scroll the dice into view at the start of the game but its selection does not affect the Bug (I think it deserves the capital letter!). There is obviously a very strange interaction taking place when BASIC is running and when this particular ADC instruction is used. (I tried ADCing a memory location and the die still jiggled).

A second, and more intermittent, bug which affects both machines (but which has not been commented on by readers as far as I know) is an apparent breakdown of the DLI sequencing. It's as though they go out of sync in a totally random fashion causing colour flashing and player positioning fluctuations. In particular, DLI3 (the final one) appears to intermittently affect previously scanned areas of the TV display. In fact I've seen this on two items of commercial software so suspected my machine was at fault but I have since checked it out on two 400's as well as my XE and the problem appears on all of them. The DLI's are, incidentally, simply a string of load/stores, no ADC's are used here!

I have tried everything I know to cure this – resetting the DLI vector in the VBI, using Immediate/deferred VBI's, using a normal graphics 0 Display List instead of the modified one etc., etc. It's all to no avail – until I press the BREAK key when, hey presto, no flashing! As with the dice Bug, however, if you send BASIC into one of its tight one-line loops, then back comes the problem.

I should be very interested to hear from anyone who can shed light on these problems. There appears to be a common interactive cause, and the effect with the BREAK key, in particular, must offer a clue to just where the problem lies.

To summarise, the problems are as follows.

1. Player horizontal positions are perfectly stable on the XE.
2. They are only stable on the 400/800 system if the ADC instruction is not incorporated.
3. The BREAK key effectively removes the bugs.
4. Bugs return even if BASIC is operating a closed loop.

So, you clever programmers, how about some real detective work? To help you out, the VBI code for the game is shown. There's no better way to improve your programming techniques than sorting out some really obscure bugs! And don't forget, if you solve it, let me know!

COMPUTER GAMMON – VBI CODE

```
PLA
LDX #6            activate
LDY #11           the VBI
LDA #7
JSR (SET)
RTS

LDA #0            reset DLI
STA 512           vector

STA 53252         set 'dice energisers'
STA 53253         off screen

LDA 1700
CLC               smooth colour
                  change
ADC #16           used in DLI2
STA 1700

LDA 1
STA 53250         horizontal dice
CLC               locations
ADC #20
STA 53251

LDA 53770         rapid colour change
STA 1701          for DLI3

STA (704)         also used for
STA (705)         dice energisers

DEC 0
LDA 0             cursor blink
BNE 4             routine
LDA #12
STA 0
STA 1702

LDA #1            dice sizes i.e.
STA 53258         double width
STA 53259

LDA 1703
BEQ 10            show the energisers
LDA #56           if 'shaking' dice
STA 53252
LDA #116
STA 53253

LDA 1             scroll the
BEQ 6             dice into view
CMP #70           when required
BEQ 2
INC 1

JMP (END)         End of VBI
```

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A059

FONT 4

At last some joy for 1029 owners. J.D. Collins finds a way to get true descenders and more fonts

Running a home computer system on a tight budget is never easy, especially when you are tempted by luxury versions of your basic equipment. Owners of 1029 printers will share my envy of the features available on more expensive printers, and will realise why I just had to have FONT 4 when I recently saw it advertised. At around £25 it seemed a good way of upgrading my 1029 to give three new font styles in addition to the standard font.

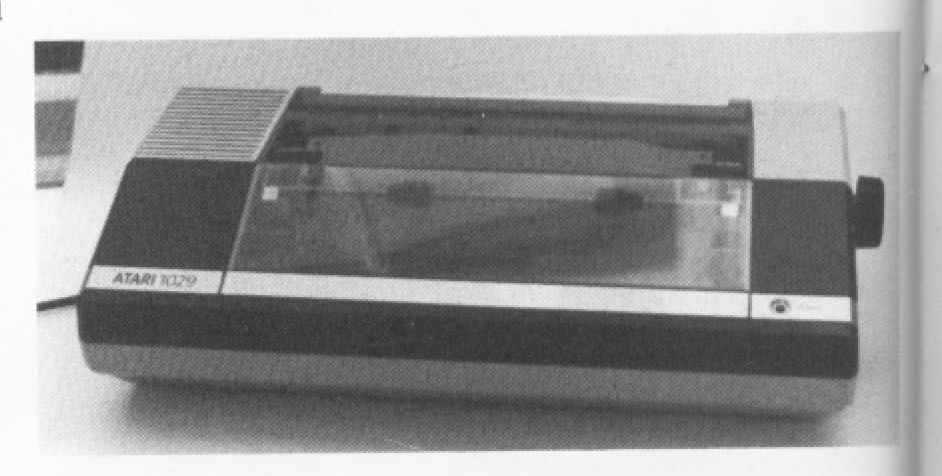
For your money you get a small board mounted chip with a short length of wire and a switch attached, all vacuum packed in a wrapper that says 'Commodore compatible'! That gave me a moments anguish, but the instructions clearly referred to Atari printers so I went ahead. One initial warning if you buy, be careful how you remove the wrapper as the instruction sheet seems stuck to it!

The three new font styles are – Near Letter Quality, Descender and Future. The difference between Descender and the standard font seems small but you have enough of a tail on p's, y's and q's etc. to make a noticeable difference to readability and presentation. The NLQ font gives a square cut style, dramatically different from the Atari font though I personally found this font less impressive than I had expected. The limitations of a seven pin print head, I suppose? The third new font is Future, similar to the 'computer' style that was fashionable on cheques a few years ago. Future font is very impressive in upper case and expanded text but in lower case you just get smaller uppercase style letters, not a real change in style. Maybe this is a correct feature of the font, perhaps the Editor can tell us? (*A font does not necessarily have to have 'lower case' letters, there is a standard, but little used, font variation in typesetting called Small Caps. Ed.*). The instructions also claim that you can use all fonts in reverse video but I have been unable to do this this so far. Graphics printing is not affected by the chip.

FITTING IT

The instructions for fitting the chip are clear and accurate but this gave me the biggest headache. I have some experience of circuit boards from my (long ago) college days and I have fitted chips on other equipment but going inside your hardware with a screwdriver and such is never easy and should always be done with caution. Apart from anything else, it will invalidate your warranty, making it expensive if anything goes wrong.

The insides of a 1029 don't give much room for messing about so take care and GO SLOWLY. Actually the hardest part is mounting the switch on the case of the printer. You should choose a spot which will be easy to reach when the case is re-assembled and be very careful where and how you drill holes! I choose a point on the top of the case at the back right hand corner where there is only one wire to avoid under the



NLQ........The quick brown fox
jumped over the lazy dogs.

FUTURE.....THE QUICK BROWN FOX
JUMPED OVER THE LAZY DOGS.

DESCENDER..The quick brown fox
jumped over the lazy dogs.

ATARI......The quick brown fox
jumped over the lazy dogs.

The different fonts available with Font 4

case. I drilled two quarter inch holes and then carved the edges into a square just big enough to accept and grip the switch without further drilling of screw holes. The installation took me a couple of hours spread over two nights, which sounds a lot of work, but better safe than sorry I thought!

WORTH IT?

Was it worth it? Yes! Although you can't switch between fonts under software control and the print isn't as good as, say, the 1027 printer, I am very happy with the result both on the printer casing and in the print quality. I feel the cost of the replacement ROM was well worth the effort especially as my warranty had already expired. If you don't want all the extra fonts, you can get a Descender font only chip for £12.99 but it might seem like a lot of work for just one font.

I have only one complaint. It didn't make it any easier to coax the £ sign out of the printer! Seriously though, FONT 4 will really breathe new life into your 1029.

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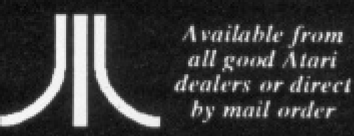
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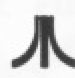




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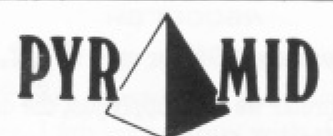


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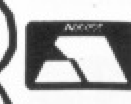
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STAGE

The PAGE 6 ST section



From a collection of public domain ST art. Author unknown.

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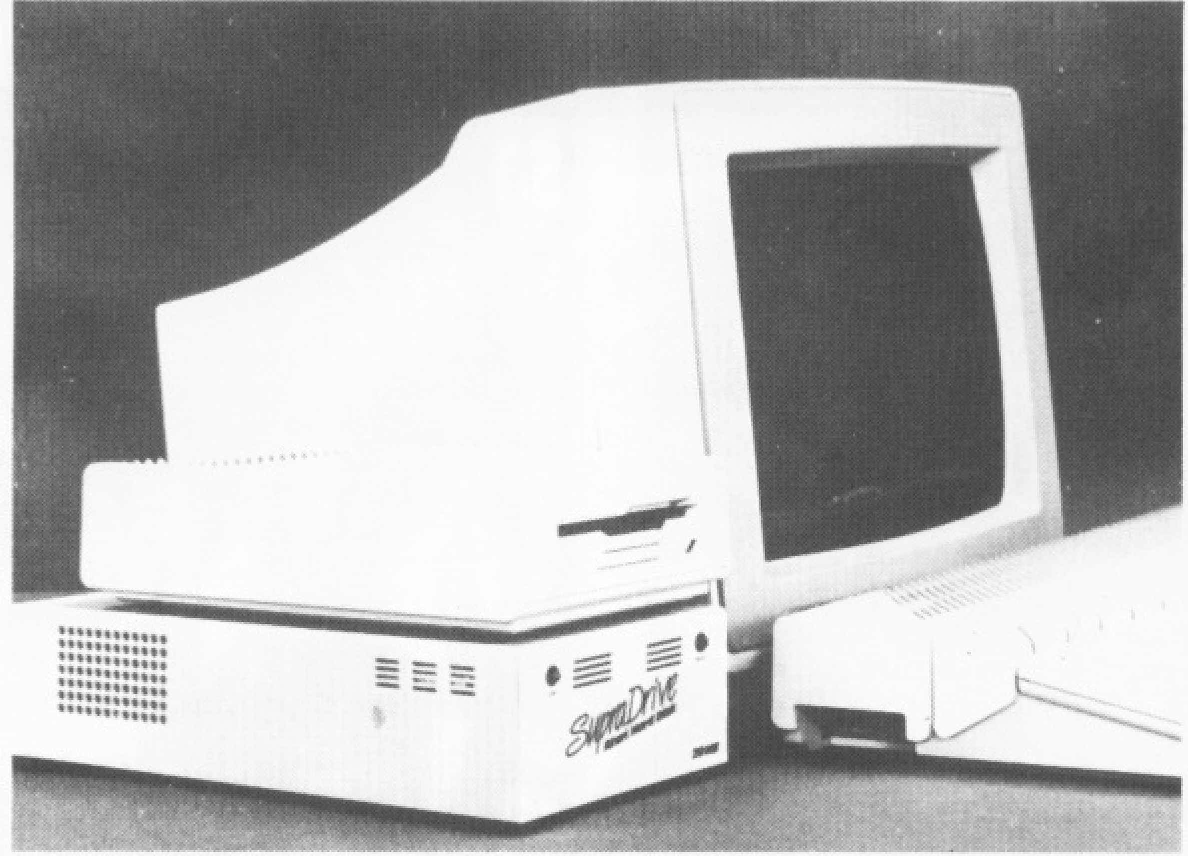
The Election Program

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U.S. Gold plan on supporting the 'serious' games side of the ST over the coming months with several conversions of S.S.I. titles. **COLONIAL CONQUEST** will be available 'with enhanced graphics' and two further releases are **WIZARDS CROWN** and **RINGS OF ZILFIN**. A new role-playing fantasy adventure is **PHANTASIE III – The Wrath of Nikademus**. U.S. Gold also promise an ST version of Broderbund's much acclaimed **PRINT SHOP** to be released in September.

Reports from the **Summer CES Show** in the States were that the amount of software for the ST is slowing down! Many of the products shown have already been released in this country and were being introduced in the States under licensing agreements. Others of note that may come this way include **SCAD** a 2-D drafting program with 16 memory pages at $99.95 and **MasterCAD** from Venezuela(!!) which claims to convert any two-dimensional image into 3-D. Electronic Arts had an enhanced version of their **Music Construction Set** and Accolade promise a superb driving simulator. Also on show from Atari was a credit size calculator with the Atari symbol and name. Just a promotional item? Or is Jack getting back to his roots!

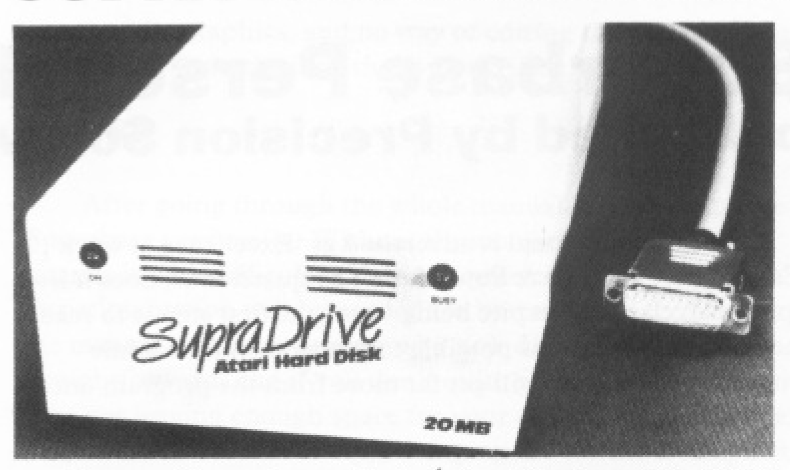
Michtron U.K. (note the change from Microdeal) have a couple of new utilities aimed at programmers. Those with Hard Disk drives can try out **M-CACHE** which will help with the speed and efficiency of the drives by holding the most recently accessed sectors in memory, like a RAM disk, thus cutting search and access time. For the less wealthy(!) **STuff** is a whole collection of useful utilities which at first glance look like a collection of public domain programs but which independent assessment indicates is much more. Too many to list but Autoboot programs, disk utilities, keyboard controllers and more are included. It sells for £24.95. M-Cache is also £24.95.

Activision have now signed up **Sierra On-Line** following their departure from Mirrorsoft. First two titles released are **KINGS QUEST III** following on from the earlier titles and **SPACE QUEST** which is an adventure in a future time but still in the Sierra style. Both retail for £24.99 on the ST.

Meanwhile back at CES a British company won the prestigious **Software Showcase Productivity Award**. The company are **Precision Software** and the product was **SUPERBASE PERSONAL**. The CES judges praised the database for its 'very visual' system offering a unique facility for co-ordinating pictures and text. Apart from the award Superbase had the other distinction of being the only database operating under GEM available in the U.S.

Glentop recently reduced the price of the GFA BASIC Interpreter and GFA BASIC Compiler from £59.95 to £45.95 and had a Special Summer Offer (which you might still catch) of three free disks of public domain software. The price cut is intended to introduce GFA to the home-user, for whom it is an ideal basic, rather than the professional user. Glentop also have a new range of GFA products coming. **GFA VEKTOR** is a 3-D graphics package that fully integrates with GFA BASIC and there is an enhancement to GFA Draft called **GFA DRAFT PLUS**. Further products include **GFA OBJECT** for designing and manipulating 3-D objects and **GFA FLOAT** which is an enhancement that provides access to the power and precision of maths co-processors. •

SUPRA 20Mb HARD DISK



Presumably you know the benefits of having a Hard Disk drive for your ST? If not, you could check out the article in Issue 26 in which Matthew Jones explained some of the pros and cons of owning a Hard Disk.

At that time, only Atari's own Hard Disk was available but now you can choose between the Atari drive, the Triangle Drive from Eidersoft (although there have been rumours that they may no longer be doing Hard Disks) and three different drives from Supra, distributed in this country by Frontier Software Ltd. Supra drives are easy to get hold of and their price has just been reduced, so are they a good alternative to the Atari drive?

We recently had the opportunity to try a Supra 20 Mb Hard Disk and were very impressed. It is much, much smaller than the Atari drive (being 285mm × 137mm × 70mm) due the fact that it uses a 3½" disk rather than 5¼". Whilst it is not quieter in use, it is no noisier than the Atari drive. It makes a *different* noise rather than more or less noise. Connecting up is simply a matter of plugging in to the ST and finding another mains plug for the power.

A number of utilities are provided for formatting, partitioning, booting the drive and the like, all of which are easy to use. Partitioning is optional but is available for up to four 'logical' drives which can be of any size you choose. All of these work well and should cause you no problems. I wasn't able to test any difference in speed of access between the Supra and the Atari drive but when you have the fast access of a Hard drive are milliseconds that important? The manual supplied is brief, but contains all the information needed. Hard drives, really are simple to use once you become accustomed to them.

One major factor in Supra's favour, is that, in addition to the standard 20Mb drive, 40 Mb and 60Mb versions are available if you need them (and can afford them!). Believe it or not, it really is possible to fill up a 20Mb drive! ST programs are bigger than you might think.

The other major consideration is the size. The Supra drive really is neat and tidy and looks much more professional hooked up to your ST. Reliability seems to be no problem. We had it running for a couple of weeks with no problems and other users have reported running them daily for six months or more. If you should get any problems, Frontier will sort them out for you and try and make sure that your precious data is preserved. You get a full 12 month guarantee.

With many items of hardware, the only question is whether it works and continues to work. There seems little doubt on either point with the Supra drives and they should certainly be considered as a viable alternative to the Atari drive. A 20 Mb drive will cost you £629.95 and if you need more storage you can have 40Mb for £929.95 or 60Mb for £1799.95. •

Superbase Personal

published by Precision Software

reviewed by Matthew Jones.

Superbase Personal is advertised as 'Excellence at work', 'Easy to use, Flexible & Powerful'. The question is, does it live up to such claims? Despite being 'easy' the first step is to read the manual. Whilst it is possible to struggle on for a while without doing so you will get far more from the program once you have read it.

SOME DEFINITIONS

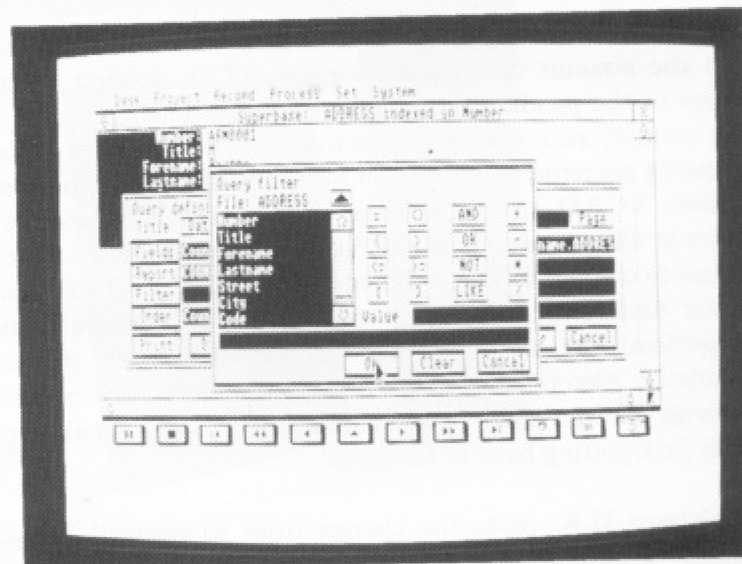
Before I start, I shall define a few terms used with Superbase and databases in general. A FIELD is a single line consisting of a field name and field data. The field data is generally entered by the user. 'Name:' is a typical field name, with the actual name entered being the field data. Fields can be of several types, character, numeric, date or several special types. A RECORD is a collection of related fields. 'Name:', 'Address:', 'Tel:' could constitute a record. A database FILE is a collection of completed records. Thus the names and addresses of all your friends could constitute a database. An index is a mechanism of ordering the database. Keeping an INDEX on the 'Name:' field would keep the database sorted in alphabetical order. RELATIONAL means that two or more database files can be linked on a 'common' field, like a name, and data extracted from each 'related' file to produce a report. Bearing all that in mind let's take a closer look at Superbase Personal.

GETTING TO KNOW SUPERBASE

The manual is a spiral bound book of over 100 pages. It is divided into several sections (Getting to know Superbase; Working with Superbase; and 8 Appendices), but starts with a 'prologue' section which explains how to set up your system for Superbase, how to load, and differences between the IBM version (which the manual mainly refers to) and the Atari version. The differences are only minor key changes (IBM uses Alt-U, Atari uses Undo etc.), and the graphic file formats.

'Getting to know Superbase' starts off with loading the program, and explaining how to open files (using a custom file selector) using one of the demonstration files as an example. It then covers the main record display modes which are: Record view, where the field names are listed in the order they occur in the file definition, Form view, where you can arrange the fields in the layout you desire, and Table view, where the field names are displayed along the top of the main window and the data is displayed in columns below (Form and Record views only show one record at a time). For each of these modes you can choose which fields you wish to view, or (by default) display them all. At this point you are introduced to one of Superbase's 'ease of use' features, the Control Panel buttons. These are buttons with video/tape player style icons to indicate their function. Not being familiar with such devices, I did not find them particularly illustrative of their purpose, but once introduced, they do seem natural. Buttons for stepping forwards and backwards, fast forwarding / rewinding, and full rewind/ forward are available, as are pause and stop buttons (for use with fast forward/rewind) and a quick search button.

The quick search button is a small insight into the filter mechanism of Superbase. Each file is indexed on only one field



at a time (though more can be created and then swapped in as desired). The quick search allows you to use wildcards to find records within the current index. The next button is the 'Filter' button which allows you to define a 'mask' which will be used to select which records will be displayed and which will be hidden. For instance, if you built a filter on your address file similar to 'Name LIKE "*smith*"', only records with the name 'Smith' in them will be displayed. The filter can be turned on and off or changed at will. Filters are set up using a dialog box which is utilised in many parts of Superbase, thus once you have learnt to use it, the rest comes more easily. The dialog shows all the fields in the current database file, as well as comparison operators (like equals, less than, greater than), brackets (for prioritising conditions), 'AND', 'OR' and 'NOT' for multiple conditions and the case insensitive wildcard searcher 'LIKE'. Mathematical operators (*, -, + and /) are available to make filters on number fields, e.g. '(total * (discount / 100)) > 50'.

Next, setting up a new file is covered. This details the possible field attributes (text lengths, numeric formats, date formats, external file) and describes how to add validation or calculation and required status. Superbase allows just about every numeric and date format you could think of (I say just about because someone is bound to find one that's missing). Currency symbols, decimal places, forced +/- signs are all covered. Calculation is used to make uneditable fields that take their data from others (VAT values, discount levels etc.). Validation is done in a similar manner to the filter mechanism, and a formula like 'value > 100' would stop an entry less than 100. Required status means that a field must have a value before it can be saved.

Other subjects covered in the new file creation are the three-level passwords, and creating indexes. The passwords allow read only, read and write but not delete, and full access. A password is not however mandatory.

A large section of the manual now covers all the other features in full detail, in the sequence they appear on the drop down menus. There is too much to cover in a review, but it includes: editing of records and saving them, the query functions (the main output facility), importing and exporting

ASCII files, printing, labels, paging, printer options (like initialisation string and page length), obtaining disk directories and database status, reorganizing the database (after large amounts of deletion), and external files.

TWO SIGNIFICANT FEATURES

Two features are significant functions of Superbase – the Query function, and External Files.

It is through the query function that Superbase achieves the 'Relational' aspect of operation. Essentially a query is a filter which is used to extract selected information from the database. You could, for instance, set up a query to list the addresses of all your friends whose telephone numbers began with '01'. If you also had a database with the names of all those who sent you cards last Christmas, you could use the card list to reference your address file and print out labels to send replies this year (why didn't I think of that before?). This would be done by opening both files and setting up a relational query to print a record (perhaps in label format) every time the card name matches the name in the addresses file. This simple example demonstrates the idea behind relational databases, but Superbase allows much more power than I can explain simply. As part of the query, you may have a report done automatically which allows you to choose to have running totals and / or record counts included in the output. Thus you could have a count done of the number of your friends who sent you a postcard, or a total amount invoiced each month, with an annual total as well. You can specify an order for the output should you wish. This latter function may slow down the report considerably, as Superbase has to find each output record first, and then sort. The output can be sent to an ASCII text file, a printer, or a new Superbase file for later use.

A less powerful query filter can be used to do automatic processing, like going through and summing amounts, setting overdue flags and so on. Similarly there is a facility to automatically remove records (perhaps out of date information). The labeller allows you to specify the layout in a not too difficult way, and is flexible enough to support all the label sizes and layouts you are likely to meet.

HANDLING EXTERNAL FILES

External files are Superbase's most interesting feature. A record can have any number of 'external file' fields. These fields hold actual pathnames of files, and they can relate to either ASCII format text files, or graphics files. The Superbase manual claims that it is able to show 1st Word files too, but I found this not to be true. When the 'Picture' icon (a camera) is clicked, the first external file is opened and displayed in a secondary window. ASCII text can be scrolled through, and the window re-sized. If the file is a graphics bit-image file, then it will be displayed either in the window (and the colours changed to match) or in the case of low resolution screens, the screen mode is changed and the whole screen used to display the picture properly. On the monochrome screen, an interpretation is shown of each modes colour shading, and while obviously not brilliant, does give a fair (if stretched) representation of the picture. Superbase will recognise and display Degas (.PI1, .PI2 and .PI3), Neochrome (.NEO) and GEM (.IMG) files on the Atari. If there is more than one external field, a menu item allows them to be stepped through. The uses of this facility are limited only by the imagination, but includes indexing word-processed documents and digitised pictures. Unfortunately there is no way of printing the graphics, and no way of editing the text, perhaps I want a mile from the inch they've provided.

IN USE

After going through the whole manual, I was able to use Superbase very easily. Without the manual, operating the queries is very difficult as they are quite complex. Experimentation will be needed for best use, and the hints in the manual will help. Setting up a new database is quite straightforward, and if you don't quite get it right first time (like not leaving enough space for your old friend Michelloni Smythson-Scott-Ashe Esq.), changing the format is simplicity itself.

Adding records is not quite so easy, as you cannot enter an automatic input mode where you enter record after record. What you have to do is press Alt-N for a new record, and then when you have finished, press ALT-S to save, wait for Superbase to save it (it does not remember keys pressed while saving), and then press ALT-N again and so on. (There are menu alternatives to the ALT keys.) Another data entry problem I found was in the Form View mode where the cursor keys would not move me from field to field at all properly, and I easily got stuck in a field, meaning I had to move around with the mouse. The Return key was alright however, but only took me down, not up. If you have been entering a large number of records, any method to reduce the burden is welcome. Such is the reason (I assume) for providing the 'Duplicate Record' menu option. Unfortunately this does not necessarily duplicate the record you just entered (and probably wanted a copy of), but most often the last one selected on the Control Panel, which when I was entering my database on 'C' library functions, was useless.

Another problem which I encountered was the fact that when you change subdirectories, Superbase closes all of the open databases. This means that you cannot have your addresses on one disk and cards list on another to do your searches, which is a pity.

The one aspect of functionality that I miss, but don't know how much I really need, is multiple active indexes. The Superbase system has one active index, and you can maintain extra indexes on any or all of the other fields. These can be switched in at any time, but this means that you can easily get a list like 'Bloggs A., Bloggs Z., Bloggs T.' where it would have been better to have had the secondary field (in this case the initial) sorted within the main index. Only the main 'all-singing' query allows such sorting.

CONCLUSION

Overall I have found Superbase very easy to use, it has some good dialogs for selection (and especially good little information 'alerts' which disappear automatically). Like all software, it is not perfect, but unlike most it comes close, despite my few problems. Superbase must be a serious contender in the database market, and if you can make use of the external file feature, this could clinch it. Precision Software are promising a 'Professional' version later in the year (which will include programmability, a word processor, and an application builder), with a cheaper upgrade path for 'Personal' owners, so it is a system which could grow if you need it to.

Superbase Personal costs £99.95 and is published by: Precision Software Limited, 6 Park Terrace, Worcester Park, Surrey, KT4 7JZ. 01-330-2089

Using GEM from the C language

Second in our programming series

by Steve Pedler

In the first article in this series, we looked at some of the graphics capabilities of GEM, culminating in a simple demonstration. In this article, we will examine some more GEM functions and add a couple of demos to the first version of the program.

HITCHES, GLITCHES AND PROBLEMS.

There were a few teething troubles with the first article which I will deal with first. I compiled the first program with Metacomco's Lattice C compiler version 3.03, with which it compiled and linked without problems. I subsequently upgraded to version 3.04 of the compiler, and on recompiling the program two warnings were output. These may have occurred on other systems, so I include fixes for them here. The first warning came from the compiler, in that a function return value mismatch warning occurred three times. This happens because Lattice 3.04 complies very closely with the proposed ANSI standard for C, in which functions not returning a value to the calling function should be declared as type void. Three functions – main(), init_gem() and finish_gem() – return no value, and the way to fix this warning is either to declare these functions as void, or – at least with Lattice C – to use a compiler option to disable this warning message in this particular context. The problem doesn't affect the running of this particular program, it is just a warning of a syntax error that might cause problems elsewhere.

The second warning was returned by the linker, to the effect that the GEM VDI global arrays contrl[ ], intin[ ], ptsin[ ], intout[ ] and ptsout[ ] had been defined more than once. Again, this does not prevent the program from operating, since the linker uses the first values it finds and ignores any others. The reason is presumably that the compiler automatically defines these arrays so the programer doesn't have to do it. This may be specific to Lattice, but if you are like me and don't like seeing warnings from the compiler or linker here's how to fix the problem:

i) delete the definitions of the five GEM VDI arrays
ii) replace them with the following arrays: WORD work_in[11], work_out[57]
iii) replace all references to intin[ ] with work_in[ ], and all references to intout[ ] with work_out[ ]

Other minor problems were that the XBIOS function Setpallete() was misspelled as Setpalette() (not in the listing, just in the text of the article) and that the format of the string for alert boxes was shown incorrectly in the text. The brackets surrounding the icon, text and buttons should be square not round brackets, and the character used to separate the lines of text and the buttons is the vertical line character, not a colon. This character is obtained by pressing Shift and the key adjacent to the left Shift key on the ST keyboard. It does print out as two short vertical lines one above the other on a dot matrix printer, so the typesetter's confusion is understandable! Again, these errors did not affect the actual listing.

Table 1. The attribute functions.

Attribute group	Functions	Feature(s) changed
Line	vsl_type	line style
	vsl_width	line thickness
	vsl_color	line colour
	vsl_ends	line end style
Fill	vsf_interior	fill style
	vsf_style	pattern fill type
	vsf_color	fill color
	vsf_perimeter	fill border visibility
Polymarker	vsm_type	marker type
	vsm_height	marker height
	vsm_colour	marker colour
Text	vst_height	character height
	vst_rotation	text baseline rotation
	vst_color	text colour
	vst_effects	text special effects
	vst_alignment	text alignment
Miscellaneous	vs_color	change a colour
	vswr_mode	change writing mode

THE PROGRAM LISTINGS

Listing 1 accompanying this article contains some minor changes and additions which should be made to the previous version (0.2) of the program.

There are some additional #defines and declarations, a few extra lines for main() to enable the new demos to be called, and I have tidied up the finish_gem() function slightly to provide a cleaner exit back to the desktop. Make the necessary changes, then add Listing 2 to the modified program. Once successfully compiled, run the program. Demo 1 will appear as before, but this time holding down the right mouse button will progress to demo 2. In this demo, holding down either button will run demo 3 and holding down both simultaneously will exit to the desktop. In demo 3, there is a change, since the program waits not for a mouse button click but for a keypress. Pressing any key returns to demo 1, unless you press the space bar which will terminate the program.

GRAPHICS FUNCTIONS AND ATTRIBUTES

Before we look at the two new demos to be added to the program, it seems an opportune moment to examine the question of graphic attributes. As we have seen, GEM possesses a large number of graphics functions. Each of these have a number of features – or attributes – which may be set as desired, including such things as colour, fill styles, line type and so on. Not all graphics functions are affected by all the various attributes and in fact each graphic output function is usually associated with a particular group of attributes. There are four such groups – line, fill, text and polymarker – plus one or two attributes affecting all graphic output. These four groups are listed in Table 1. This is not a complete list, but it contains the vast majority of attribute functions most users will need. Clearly, changing one attribute does not affect another, so that (for example) changing the text colour will not alter the line or fill colours. From now on, when a graphic function is said to be associated with a particular group of attributes it should be easy to decide how to change a particular feature.

DEMONSTRATION 2

The second demonstration to be included in our developing program is another example of simple animation, carried out this time by rapidly drawing

```
/* ----------- LISTING 1 -------------------------------------------*/

/* GEM demonstrations from the 'C' programming lanuage */
/* Written using the Metacomco Lattice C compiler version 3.04 */
/* For Page 6 Magazine, England */

/* This listing details the lines to be added to the first version ( 0.2 )
of this program, published in issue 28 of Page 6 Magazine */

/* ---------- new defines -------------------------------------------- */

#define CENTRED 1
#define SPACE 0x3920

/* ---------- new declarations --------------------------------------- */

WORD    demo2(), demo3();

/* NOTE: if you are using Lattice C version 3.04, you should:
        1) delete the definitions of the global VDI arrays contrl[],
        intin[], intout[], ptsin[] and ptsout[]
        2) add two definitions - WORD work_in[ 11 ], work_out[ 57 ];
        3) replace all references to intin[] and intout[] in the function
        init_gem() with work_in[] and work_out[] respectively          */

/* ---------- new main() function ------------------------------------ */

main()
{
        WORD c;

        init_gem();
        while( finished !=0 ){
            c=demo1();
            if( c==3 ) {
                finished=0; break;
            }
            c=demo2();                              /* ---- new lines ----*/
            if( c==3 ) {
                finished=0; break;
            }
            c=demo3();
            if( c==SPACE ) {
                finished=0; break;
            }
        }
        finish_gem();
}

/* ----------- new finish_gem() function ---------------------------- */

finish_gem()
{
        WORD reset;
        reset=0;
        v_clrwk( work_handle );                     /* ---- new line ---- */
        Setpallete( old_pal );
        v_show_c( work_handle, reset);
        v_clsvwk( work_handle );
        appl_exit();
}
```

```
/* GEM demonstrations from C */
/* Current version: 0.2, 11/7/87 */

/* ------------------ LISTING 2 ------------------------------------- */

/* This listing contains the two new demos to be added to version 0.2 of
the program once the changes contained in Listing 1 have been made.      */

/* ------------------ demonstration #2 ------------------------------- */
/* create illusion of movement by drawing and redrawing circles */
WORD demo2()
{
        int i;

        WORD c, x_incr, y_incr, last_x_incr, last_y_incr, centre_x,
        centre_y, last_x, last_y, color, radius;

        color=1;
        new_pal[ 0 ]=0;          /* black background */
        new_pal[ 15 ]=0x777;
        Setpallete( new_pal );

        v_clrwk( work_handle );

        vst_color( work_handle, 1 );
        v_gtext( work_handle, 8, 196, "Demo 2 - Moving circles" );
        vsf_color( work_handle, color );
        vsf_interior( work_handle, 0 );           /* no fill */
        vsf_perimeter( work_handle, 1 );          /* visible border */

        x_incr=last_x_incr=7;
        y_incr=last_y_incr=5;
        radius=10;
        last_x=153;
        last_y=95;

        for( i=0, centre_x=160, centre_y=100; i<10; ++i, centre_x+=x_incr, cent
re_y+=y_incr ) {
            v_circle( work_handle, centre_x, centre_y, radius );
        }
```

continued overleaf

```
        button=0;
        while( button==0 ){
                if( centre_x<14 || centre_x>306 ) {
                        x_incr*=-1;
                        color+=1;
                        if( color>15 ) color=1;
                }

                if( centre_y<14 || centre_y>179 ) {
                        y_incr*=-1;
                        color+=1;
                        if( color>15 ) color=1;
                }

                vsf_color( work_handle, color );
                v_circle( work_handle, centre_x, centre_y, radius );
                centre_x+=x_incr;
                centre_y+=y_incr;

                if( last_x<14 || last_x>306 ) last_x_incr*=-1;
                if( last_y<14 || last_y>179 ) last_y_incr*=-1;
                last_x+=last_x_incr;
                last_y+=last_y_incr;

                vsf_color(work_handle, 0 );     /* background colour */
                v_circle( work_handle, last_x, last_y, radius );

                vq_mouse( work_handle, &button, &dum, &dum );
        }
        c=button;
        while( button!=0 ){
                vq_mouse( work_handle, &button, &dum, &dum );
        }
        return( c );
}

/* -------------------- demonstration #3 -------------------------------*/
/* printing text on the screen */
WORD demo3()
{
        WORD c, pxyarray[ 4 ];

        char str[ 3 ];
        str[ 0 ]=0x0e;          /* the two haves of the Atari logo */
        str[ 1 ]=0x0f;
        str[ 2 ]=0x00;          /* null terminator */

        v_clrwk( work_handle );
        vst_color( work_handle, 1 );
        v_gtext( work_handle, 8, 185, "Demo 3 - Text output" );

        vst_height( work_handle, 50, &dum, &dum, &dum, &dum );
        vst_color( work_handle, 2 );
        v_gtext( work_handle, 25, 150, "ATARI ST" );
        v_gtext( work_handle, 170, 150, str );

        vst_effects( work_handle, 12 );   /* 12 = italic & underline */
        vst_height( work_handle, 8, &dum, &dum, &dum, &dum );
        v_gtext( work_handle, 25, 170, "Page 6 Magazine - England" );

        vst_color( work_handle, 3 );
        vst_effects( work_handle, 32 );    /* 32=shadowed text */
        vst_height( work_handle, 13, &dum, &dum, &dum, &dum );
        vst_alignment( work_handle, CENTRED, 0, &dum, &dum );
        v_justified( work_handle, 165, 25, "stretched text", 280, 1, 1 );
        vst_alignment( work_handle, 0, 0, &dum, &dum );

        vst_effects( work_handle, 0 );    /* 0=standard text */
        vst_color( work_handle, 4 );
        vst_height( work_handle, 4, &dum, &dum, &dum, &dum );
        v_gtext( work_handle, 50, 102, "very small text indeed!!" );

        vst_height( work_handle, 8, &dum, &dum, &dum, &dum );
        vst_color( work_handle, 5 );
        v_gtext( work_handle, 100, 120, "normal.." );
        vst_effects( work_handle, 2 );          /* 2=light text */
        v_gtext( work_handle, 25, 120, "Light.." );
        vst_effects( work_handle, 1 );          /* 1=bold text */
        v_gtext( work_handle, 185, 120, "and bold." );


        vst_rotation( work_handle, 2700 );      /* baseline rotation 2700 degre
es */
        vst_height( work_handle, 8, &dum, &dum, &dum, &dum );
        vst_color( work_handle, 6 );
        vst_effects( work_handle, 16 );   /* 16=outlined text */
        v_gtext( work_handle, 5, 5, "OUTLINED TEXT" );

        vsl_color( work_handle, 7 );
        vst_color( work_handle, 7 );
        vst_rotation( work_handle, 0 );         /* normal baseline */
        vst_effects( work_handle, 0 );
        vst_height( work_handle, 7, &dum, &dum, &dum, &dum );

        vsl_width( work_handle, 1 );
        pxyarray[ 0 ]=25;
        pxyarray[ 1 ]=40;
        pxyarray[ 2 ]=305;
        pxyarray[ 3 ]=80;
        v_rbox( work_handle, pxyarray );

        v_gtext( work_handle, 30, 55, "Press any key to continue..." );
        v_gtext( work_handle, 30, 75, "or space bar to exit program" );

        vst_color( work_handle, 1 );    /* these 3 lines reset values */
        new_pal[ 0 ]=0x777;             /* needed by demo1()          */
        new_pal[ 15 ]=0;

        return( c=evnt_keybd() );
}
```

and redrawing circles. The aim is to give the illusion of a chain of circles moving across the screen.

The demo starts by first setting the background colour to black. The screen is cleared, the demo's title printed at the bottom of the screen and three of the fill attributes are set. We looked at vsf_interior() last time, but note that a fill style of zero denotes no fill – that is, just the outline of the object will be drawn. When GEM draws an object which is associated with the fill attributes, it encloses the object with a line drawn in the current fill colour. You would not be able to distinguish this line if the object is drawn in solid colour, but it might be visible if a patterned fill style were used. For this reason, the enclosing line can be disabled with the function vsf_perimeter(). The format of this function is :

vsf_perimeter(device handle, perimeter flag)

where the perimeter flag can have the value 0 (outline disabled) or 1 (outline enabled). Here we ensure that the outline is enabled, because if it were not the combination of no fill and no visible outline would result in invisible circles!

After initialising some variables, the program draws 10 circles starting at position 160 (x-coordinate), 100 (y-coordinate). The centre of the circle is changed each time through the loop by adding the incremental values x_incr and y_incr.

There are in fact two ways of drawing circles in GEM. The first is to use v_circle() as shown here, which is called by:

v_circle(device handle, circle centre x-coordinate, circle centre y-coordinate, circle radius)

The parameters passed to the function are self-explanatory, and are the same as in v_pieslice() which we looked at last time. The alternative method is to use v_arc() as follows:

v_arc(device handle, circle centre x-coordinate, circle centre y-coordinate, circle radius, start angle, stop angle)

These parameters are identical to those in v_pieslice(). The major difference between the two functions,

other than the obvious one that v_circle() draws complete circles whereas v_arc() can draw portions of a circle (i.e. arcs), is that v_circle() uses fill attributes but v_arc() uses line attributes. If you want circles filled with a colour or pattern you can use v_circle() but if you want circles drawn with thick lines or different line types (such as dotted lines) use v_arc(). You might care to modify this program to use v_arc() rather than v_circle(). To draw a complete circle using v_arc() set the start angle to 0 and the stop angle to 3600 (angles are given in tenths of degrees). You can change the line colour with vsl_color(), which is called in identical fashion to vsf_color(), and the line width with vsl_width() which has this format:

vsl_width(device handle, line width)

where width is the line thickness in pixels. The width should be an odd number (default thickness is 1) and if an even number is given the nearest lower odd number is used. The line type can be changed with vsl_type() as follows:

vsl_type(device handle, line type)

where line type can have one of these values:

value	line type result
1	solid line
2	long dashed line
3	dotted line
4	dash-dot line
5	dashed line
6	dash-dot-dot line
7	user defined line style

Experiment with these values and see what effects are produced.

To return to the demo, the program next enters a 'while' loop in which another circle is drawn at the head of the chain while the last one is erased. This is done by setting the circle colour to zero (background) and overwriting the last circle. At the end of each pass through the loop, the state of the mouse buttons is checked and providing a button has not been pressed the loop continues. The function used to detect a button press is vq_mouse() (just to make a change from graf_mkstate() which we used last time). Call this function as follows:

vq_mouse(device handle, mouse button, mouse x-coordinate, mouse y-coordinate)

where the mouse button can have the same values as we found with graf_mkstate(). We are not interested in the position of the mouse here, so the coordinates are just placed in the dummy variable. Note that pointers to the three variables, not the variable names themselves, are passed to the function. (This must also be done for graf_mkstate().) Finally, before returning the mouse button state to the main() function, the mouse button is checked again until the user releases it. This ensures that the button is not still being pressed on exit from the function, which might have untoward effects.

DEMONSTRATION 3

This simple demo shows how text can be printed to the screen using GEM. Rather than go through the demo in detail – it's very simple – I will discuss the functions used in the program and leave you to decide how the program works.

GEM has two functions for outputting text to a graphics screen. The simpler is v_gtext(), which is used as follows:

v_gtext(device handle, text x-coordinate, text y- coordinate, text string)

How the x and y coordinates are used is affected by one of the text attribute functions, vst_alignment(), which we will look at in a moment. The text string can either be a literal string enclosed in double quotes (the compiler automatically adds a terminating null byte as required by C convention) or a pointer to the string. Both methods are used here, the second method being used to print the Atari logo on the screen. The logo comes in two halves with the character values 0E and 0F (hex) respectively, and these values are placed into the array str[] at the beginning of the program.

The function vst_alignment() alters the way GEM uses the supplied coordinates. It is called as follows:

vst_alignment(device handle, horizontal alignment, vertical alignment, selected horizontal alignment, selected vertical alignment)

where the last two parameters are supplied as the addresses of (i.e. pointers to) two variables into which GEM will place the selected alignments. In this example, the dummy variable is used for convenience. The horizontal alignment can have one of three values:

value	text alignment
0	left justified – x coordinate is that of the leftmost end of the string
1	centred – x coordinate is that of the centre of the string
2	right justified – x coordinate is that of the rightmost end of the string

By default the text is set to left justified. The vertical alignment can have the following values:

value	text alignment
0	y coordinate is that of the text baseline
1	half line
2	ascent line
3	bottom line
4	descent line
5	topline

I am unsure of the effect of values other than zero, which is the default value. Readers may care to try them out and see what results are produced.

The second method of text printing is to use v_justified(). This is used as follows:

v_justified(device handle, x-coordinate, y-coordinate, text string, string length, word space flag, character space flag)

The first four parameters are the same as for v_gtext(). The string length is the distance on screen, expressed in pixels, into which the text string is to fit. Text can therefore be compressed or stretched by giving a length different to that of the string itself. To do this, GEM will either have to alter spaces between characters or between words, or both. You can specify which of these methods is used by setting the two flags in the function. If the flag is set to zero, space alteration is disabled; if set to one, it is enabled. ➡

The other attribute functions used here are straightforward. Text colour is selected with vst_color(), and character height (in pixels) with vst_height(). There are minimum and maximum limits on character size, and these are returned in the four parameters following the requested height. We aren't really interested in these here, so they are placed in a dummy variable. Text special effects can be selected using vst_effects() which is called as follows:

vst_effects(device handle, effects)

where different values of the variable effects have these results:

value	effect
0	normal text
1	bold text
2	light text
4	italic text
8	underlined text
16	outlined text
32	shadowed text

These values can be combined, so that (for example) a value of 28 would produce underlined italic outlined text. Most of these effects are shown in the demo, although the effect of shadowed text is not very apparent.

The final effect shown is that of changing the text baseline vector using vst_rotation(). This is called as follows:

vst_rotation(device handle, baseline rotation)

where the baseline rotation is expressed in tenths of degrees. Normally, this is set to zero, producing horizontal text, but it can supposedly produce text printed at an angle. Unfortunately, I found that in low resolution at least only angles of 0, 90, 180, or 270 degrees were accepted, and any other value resulted in the nearest of these angles being selected. This may simply be a limitation of low resolution and it may be that other angles can be used in higher resolutions.

Some of the text on the screen is shown enclosed in a box with rounded corners. The box is drawn with the following function:

v_rbox(device handle, points array)

where the array contains the x and y coordinates of the top left corner of the box in its first two elements, and the coordinates of the diagonally opposite corner in the second two elements. This function uses line attributes.

Finally, just for a change the demo waits for a keypress before exiting rather than a mouse button click. For this purpose we could have used a standard C library function, but instead I have used the GEM function evnt_keybd(). This waits for the user to press a key and returns a 16-bit integer (not a char) containing the value of the key pressed. The value returned is therefore not an ASCII value but a GEM VDI keycode; lists of these can be found in most GEM reference books. The great advantage of using this function rather than one from the standard library is that it will detect the use of the function keys as well as standard ASCII keycodes.

COMING NEXT

I think that about wraps it up this time. In the next part of this series we will look at some of the remaining GEM graphic functions, and after that it will be time to examine those features which really distinguish GEM such as windows, menus, dialogs and so on. •

Screen Grabber



Save your favourite screens to disk with this utility

by Paul Lay

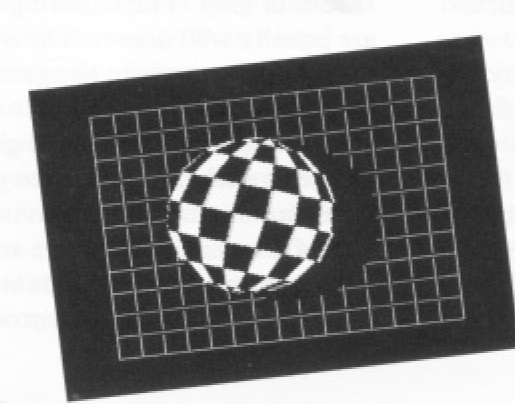
```
10   rem ************************************************
20   rem *                                              *
30   rem *             ST Screen Grabber                *
40   rem *               By Paul Lay                    *
50   rem *                                              *
60   rem ************************************************
70   fullw 2: clearw 2: gotoxy 0,0
80   ? " ST Screen Grabber": ? " By Paul Lay": ?
90   ? " Insert destination disk & hit any key";
100  key$=input$(1): ?: ?: ? " *** Creating file 'a:grabber.prg'"
110  on error goto 210
120  open "R", #1, "a:grabber.prg", 1
130  field #1, 1 as byte$
140  on error goto 220
150  checksum%=0: for rec%=1 to 368
160  read code%: checksum%=checksum%+code%
170  lset byte$=chr$(code%): put #1,rec%
180  next rec%: close #1
190  if checksum%<>17716 then 220
200  ? " *** Creation successful": end
210  ? " *** Error opening file": end
220  ? " *** Error in data statements": end
230  data 96,26,0,0,1,68,0,0
240  data 0,0,0,0,0,0,0,0
250  data 0,0,0,0,0,0,0,0
260  data 0,0,0,0,66,167,63,60
270  data 0,32,78,65,92,143,47,0
280  data 32,121,0,0,4,86,48,60
290  data 0,7,74,152,103,6,81,200
300  data 255,250,96,6,33,60,0,0
310  data 0,60,63,60,0,32,78,65
320  data 92,143,66,103,47,60,0,0
330  data 4,0,63,60,0,49,78,65
340  data 74,121,0,0,4,238,103,2
350  data 78,117,16,57,0,255,130,96
360  data 2,64,0,3,51,192,0,0
370  data 1,20,6,0,0,49,19,192
380  data 0,0,1,65,48,60,0,15
390  data 32,124,0,255,130,64,34,124
400  data 0,0,1,22,50,24,2,65
410  data 7,119,50,193,81,200,255,246
420  data 63,60,0,0,47,60,0,0
430  data 1,54,63,60,0,60,78,65
440  data 80,143,51,192,0,0,1,18
450  data 47,60,0,0,1,20,47,60
460  data 0,0,0,34,63,57,0,0
470  data 1,18,63,60,0,64,78,65
480  data 223,252,0,0,0,12,66,128
490  data 16,57,0,255,130,1,225,136
500  data 16,57,0,255,130,3,225,136
510  data 47,0,47,60,0,0,125,0
520  data 63,57,0,0,1,18,63,60
530  data 0,64,78,65,223,252,0,0
540  data 0,12,63,57,0,0,1,18
550  data 63,60,0,62,78,65,88,143
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590  data 51,252,255,255,0,0,4,238
600  data 78,117,0,0,0,0,0,0
610  data 0,0,0,0,0,0,0,0
620  data 0,0,0,0,0,0,0,0
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650  data 0,0,112,105,99,116,117,114
660  data 101,48,46,112,105,0,0,0
670  data 0,0,0,34,48,10,16,22
680  data 14,6,12,44,18,14,18,0
```

Have you ever fancied grabbing some stills from your favourite games and saving them to disk? Its a great way to prove that you really did get that high score or to keep a record of the games in your collection. Not just games though, for Screen Grabber works on just about any program that does not disable the VBL queue processing, and that includes many of the well known commercial and public domain programs. Try it, it really does work!

Screen Grabber can save a screen to disk in DEGAS format in any resolution and works simply by diverting the built in ALT-HELP printer function to a disk file. The program itself is easy to use once you have typed it in. Full error checking for the DATA statements is included so you can't go wrong. Type it in using ST BASIC and save the program. Now RUN it and GRABBER.PRG will be created on your disk. Whenever you want to grab some screens, just run GRABBER.PRG first and then run your favourite program.

Once GRABBER has been run, it will be installed and will return you to the desktop. Now pressing ALT-HELP together while another program is running will dump the screen to disk. Up to 10 screens can be saved in one session and these will be called PICTURE0 to PICTURE9 with the appropriate DEGAS format extender (PI1, PI2 or PI3). If you try and save more than 10 pictures per session, the earlier ones will be overwritten, so you must take a break and rename your files if you want more pictures. Apart from the limitation in the number of files, the only other thing to watch is that you should not press ALT-HELP during a disk access and should make sure that you have the correct disk in the drive (with no write protect!).

Go grab some screens!



BARBARIAN
Psygnosis
Price: £24.95

Reviewed by John Davison jnr



"Can you become Hegor the famous dragon-slaying, monster-mangling Barbarian?" That's what Psygnosis would like to know.

I have not been a great fan of Psygnosis games but their latest release, Barbarian, is truly magnificent. Psygnosis have really pulled out all the stops to bring us their best game yet.

The whole package is one of extreme quality. The packaging, as always, is very good. Inside the box you will find two disks, an instruction sheet, a novella, and a fantastic poster created especially for the game by Roger Dean. The story leading up to the game is quite long and complicated, but I shall attempt to describe the basic plot of the game: You are Hegor, son of the famous hunter and dragon slayer, Thoron. Many years ago, Thoron was killed by the dragon Vulcuran, who is guardian to the evil Necron. The surprising thing is that Necron is your fathers brother, who was killed by your father many years ago in an attempt to free a city from Necron's evil reign. Necron's soul was not destroyed when Thoron killed him, and it is this which lives on, wreaking havoc upon villages and towns by sending hell dogs and ape men to steal children and animals. Your task is to enter the underground world of Durgan, where Necron has constructed his lair, and to destroy it thus avenging the death of your beloved father.

In order to complete the game you must destroy the crystal which is the source of the evil power of Necron. Once the crystal has been destroyed, the volcano in which Durgan is situated will begin to erupt, making it imperative that you reach the surface again before it blows. The time it takes you to destroy Necron's crystal, is not only your score for the game, but also the time which you have to get back to safety at the end of the game.

Hegor can be controlled by any combination of mouse / keyboard / joystick, and as with all Psygnosis games so far (with the exception of Arena) the mouse is probably the best form of control. You manipulate Hegor mostly with a group of icons at the bottom of the screen, which enable you to do such things as run, jump, attack, defend, flee, etc. etc.

That's what the game's about and how you play it but what are the graphics and sounds like? As we now come to expect from Psygnosis the graphics are absolutely superb. Whilst loading the game, you are treated to three really good pictures. The first is the now familiar Psygnosis logo drawn in many shades of grey and blue, which has been on all of Psygnosis' recent games. After a short while the 'Barbarian' logo appears with a fantastic picture of your character wielding a great broadsword. Psygnosis games usually have good title screens and this is definitely their best yet.

You are next prompted to insert the second disk, and a few seconds later you are treated to probably the best picture I have seen on a computer game. The Roger Dean poster found in the packaging has been reproduced faithfully on the screen, complete with the red dragon (presumably Vulcuran, Necron's guardian) standing over the waterfall and the eerie forest background. The loading screens aren't the only impressive pieces of artwork within the game. The backgrounds, and especially the sprites, are also excellent. Your character, Hegor, for example is drawn in many shades of brown, and he has long flowing blonde hair. Around his wrists he wears large silver wristbands, depicted in several shades of grey. The attacking hordes are equally well drawn. The number of these evil creatures in the game is quite overwhelming. I have to date only completed about 25% of the game and I have encountered at least ten or eleven different creatures, each having its own way of attacking you. Some attack with swords or axes, hell hounds attack with their teeth, others just jump on you (or through you!). Once you have got the hang of the game some of the earlier creatures are easily disposed of with your mighty sword.

The sound in Barbarian is as impressive as the graphics. As we have now come to expect from a lot of the more recent games, the sound effects are digitized, thus giving a very realistic feel to the game. Most of Hegor's moves are accompanied by some kind of cry or grunt. Ones of note are when he attacks a creature, gasping and grunting with each blow, and then when he runs away. He drops everything he is carrying, cries for help and then runs off in the opposite direction! All of the creatures have their own noises as well, for example the Hell Dogs bark, the enormous muscular guards go around making sounds like they are saying 'duh!', which gives the impression that they are a bit on the thick side (which indeed they are!). One of my favourite sounds in the game is when there is a very large creature of some kind clad totally in armour, and each step he takes towards you is accompanied by a metallic 'clump'.

So what's my conclusion about Barbarian then? Well, I think that it is most definitely Psygnosis' best game yet, and it deserves to sell well. The graphics are superb and although the animation is a little jerky in places, you don't really notice it. The sound is very good and adds a great deal of atmosphere to the game.

The packaging is great, as usual, and the novella that comes with the game is very well written, containing a few cryptic clues to help you in completing the game. Overall, this is an excellent game which most experienced gamesters will enjoy because it is both entertaining and humorous. •

GAUNTLET
U.S. Gold
Price £24.95

Reviewed by John Davison jnr

The much awaited ST version of this excellent game has finally arrived. Many months of waiting are finally over, so was it worth the wait? The eight bit version was reviewed in issue twenty eight and was given a not very favourable review. Is the ST version any better, then? Well, yes and no.

Graphically and sound wise the game is superb, but U.S. Gold have yet again failed to iron out the bugs. Purchasers of the game on the various eight bit formats persistently complained to U.S. Gold about the bugs, through letters to the company itself, and through letters to various other computer publications such as 'Computer and Video Games'. This I would have thought would be an incentive to actually get it right this time. But I fear that yet again many, so very obvious, bugs have managed to get through what should have been quite rigorous play testing. Bugs such as suddenly having two of yourself instead of just one! Or such as when one character goes through an exit to the following level, and the other exits to, say, level eight and the game goes completely nuts. It can't then be played until one of the characters' health points run out and he therefore dies!

When the game loads (it comes on two disks) you are greeted by the now famous Gauntlet title page, and with some quite impressive music, which has been sampled from the actual arcade machine. The sound is the one thing in this game which is consistently excellent, all of the sound work being done by 2-bit Microsystems (presumably with their Replay cartridge). After the music etc. was over I attempted to start the game by selecting the Wizard, as this is my favourite character both in the arcades and on the eight bit version of the game. I pressed 'insert' to bring the Wizard into play, and I waited .... The disk drive whirred and chugged a little before finally the computer splatted four 'bombs' across the middle of the screen. Oh no!!! I quickly reloaded the game and tried selecting the Wizard again, and yet again the game crashed. After much experimentation I discovered that with joystick 1 it seems you could only be a Warrior or an Elf if you are playing a one player game! Yet another BUG??

The sprites in Gauntlet are all very good, the four major characters are extremely well drawn and the various nasties are significantly better than in the eight bit version. The backdrops contain much detail and in many cases look very close to the arcade version. My only real complaint about the graphics is the scrolling, which is terrible. It is probably the worst scrolling I have yet seen on an ST game. It is so bad that after a while it sends you almost boss-eyed!

But ... even though the scrolling is bad, and the game as a whole is bug ridden, it is still, underneath, an infinitely playable game! The ST version has not lost any of the playability of the arcade machine, other than the four player aspect. With two players you will find yourselves shouting at each other and helping each other out and generally having a good time.

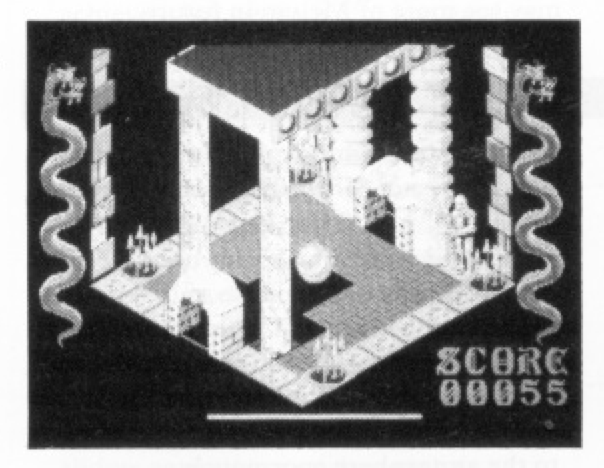
I'm not sure if it was worth the wait, as I was personally expecting something a little better than this. The longer you wait the more you expect and perhaps if it had been released earlier it would have had much more impact. •

AIRBALL
Microdeal
Price £24.95

Reviewed by John Davison jnr

It's hard to keep up with Microdeal nowadays. Just when you think they'll stop for a while because they've released something good, (i.e. Goldrunner) they go and release yet another superb game. Their latest offering is Airball, a three dimensional arcade adventure of exceptional quality.

The plot of the game is this : You have been transformed into a rubber 'airball' by an evil wizard (goodness knows why, but you have!). Your task is to move about the mansion in which you have been imprisoned and find the spellbook so that you can return to being a human. Amongst the things that are hindering your path through the mansion are spikes, killer pads, and steep drops. Also, to add to your many worries, your ball has a slow puncture which means that every now and then



you have to find a pump with which to re-inflate yourself.

The graphics in the game are superb, each room is depicted in many shades of grey with cracked tiles in the floor and very solid looking pillars and sculptures. The graphics have all been done by the now famous Pete Lyon, who, as you know, did the graphics for Karate Kid II and Goldrunner. The music and sound within the game are also very good. There are four tunes in all – one on the title screen, one during the game, a depressing sorrowful tune when you die, and a perky little tune on the high score table.

More➡

The game can be controlled by either mouse, joystick or keyboard, and I would say that a joystick is most definitely the best control method. The mouse is probably the worst as it is very difficult to master, but then I would imagine that it depends on what you are used to.

I can thoroughly recommend this game as it is both very playable and impressive to look at, which is sadly quite a novelty compared to many recent ST games. Most companies now appear to be putting their all into the graphics and sound, but making a game which is very boring to play. Airball on the other hand is different, being a worthy addition to anyones collection. In fact many would say it's an essential buy and, like some of its predecessors from Microdeal, it is most likely to become a classic. •

MOUSE TRAP
Microvalue/Tynesoft
Price £14.95

Reviewed by John Davison jnr

After my comments about Tynesoft in the review of Timeblast, you might think that I might pan whatever they produce but this is not true, as with Mouse Trap they have produced a game which I consider to be very good.

The game is basically a ladders and platforms game, not exactly the most original idea but one which MicroValue/Tynesoft really have turned into a very pleasing game indeed. You control Melvin the Mouse, and have to win back the affections of your girlfriend, Meryl, who has just left you for another mouse (ah!). She feels that you are no more than a cheese scavenger! So, what do you have to do to win back your childhood sweetheart? Well, you do what you do best, scavenging – to find fame and fortune.

That's the plot, sweet isn't it? The game, as I said earlier, is just a ladders and platforms game but the graphics are especially good. They are very crisp, clear and colourful making the game very pleasing to the eye. The sprite which you control, Melvin, is very good, and there is only one word to describe it really and that's – 'cute'. Yes, a cute little mousey character, who dashes about the screen with his little tail waggling about and his nose bouncing up and down!

The other sprites on the screen are equally pleasing, especially the big dopey guy who appears every now and then, with the massive nose and the big blinking eyes. The things which attack you are some of the whackiest I have ever seen, they range from fried eggs, to giant rolls of toilet paper!!! All of them are very nicely drawn in a cartoon like style.

The sound in the game isn't bad. The music is very chirpy and happy although not amazing, just average, but the sound effects are, regrettably, just about non existent. Still you don't really notice that they are missing.

This is the first game where I might possibly believe the claims on the packaging! The message on the back of Mouse Trap is – " MOUSE TRAP the best platform style game written for the ST with superbly detailed graphics and compulsive game play. Old in style, brilliant in design, a MUST for every ST owner." – which although a little 'big headed' is just about true. This game is great value, so if you like platform games, get it! I hope that we may see more of Melvin in future releases from MicroValue. •

PROHIBITION
Infogrames
Price: £19.95

Reviewed by John Davison jnr

Prohibition is not the first game to be released from the French company Infogrames, but it is the first that I have encountered, and I must be honest with you, it isn't exactly the greatest game ever written.

Infogrames have taken the theme from the Prohibition era in the 1930's in America and turned it into what is potentially a good game but which falls short in several areas. As with many games nowadays it is another shoot 'em up. You control the sight of a machine gun, and must scroll around the various buildings blowing away the gangsters hiding in windows, dustbins, doorways etc. The gunsight is controlled by either the mouse, which feels fairly natural after a while, or the keyboard, which doesn't. The background scrolls smoothly by in any of four directions, and is quite fast. The background itself is in medium resolution, so only four colours are available. The colours chose are black, red, white and grey which gives a certain 'old' murky nineteen thirties type feel to the game and adds to the atmosphere enormously. However, whereas other reviewers have said the graphics are good, I personally feel that they are rather too plain. I feel that the authors could have done a much better job.

The sound is digitized, as in many cases on the ST. The screams of the hostages and the 'ratatat' of the machine guns are all excellent. When you are hit, the sound of your scream and groaning really is quite horrific!

This isn't a bad game, but then again it isn't a good game either. Some people will however find it enthralling because it tempts you back for 'just one more try'. •

NINJA MISSION
Mastertronic
Price: £9.95

Reviewed by John Davison jnr

This is the first in Mastertronic's budget range of games for the ST. Basically 'Ninja Mission' is the old Mastertronic game 'Ninja' ported across from the 8-bit computers, however the graphics have been improved a fair bit.

Upon loading the game, you are greeted with quite an impressive picture, along with a fairly good tune. The tune was written by David Whittaker, who I believe is quite well known for his musical creations on the Commodore 64. The game has you playing the part of a Ninja who has to 'Enter the Temple of Death and regain the glowing idols stolen from the Princess by the Hordes of Darkness'. What this really means is that 'Ninja Mission' is an arcade adventure where you go around picking things up, and instead of shooting little robots or whatever, you have to beat them up, Ninja style.

The mission begins at the Tori, and here you will usually find a Ninja star or two lying on the ground. You pick this up and then head off to either the left or right hand side of the screen. When you leave the screen, everything goes black and the name of the next screen comes up in suitably chunky Chinese style writing. This is all very pretty, but it does slow down the game considerably. Other than that the game is quite playable and enjoyable if you like beat 'em up games. The sprites are very good, being fairly large and reasonably detailed (not as much as the International Karate sprites though!) and they move quite smoothly. The joystick reacts quite well unlike on some karate games, and there is a reasonable number of moves, some of which I have not come across before in any other Karate game, involving such things as a Samurai sword and the ninja stars.

Overall this isn't a bad game but it is not the game that will 'Blow the black belts off all the others' as the packaging claims. The price is good, although I still don't count nearly ten quid to be a budget release. •

SHUTTLE II
Microdeal
£24.95

Reviewed by John S Davison

Long ago, when 8-bit Ataris reigned supreme, Microdeal brought out a 16K cassette based simulation/game called Space Shuttle. It looks like they've now dusted off the concept and produced a completely new version for the ST. The basic idea behind it is the same as before – to complete a Space Shuttle mission from launch into orbit, locate and retrieve a faulty communications satellite, and return to your landing site on Earth. In an attempt to add a competitive element, Microdeal have added point-scoring, high score, and other features to the basic simulation, making it more of a game than a serious simulation.

As you'd expect, this implementation is light years ahead of the old version. It's apparent right from the colourful title sequence showing a 3-D rotating cube with different graphics on each face. Improvements extend through to the packaging, too – the disk and instruction booklet are enclosed in a glossy, high quality cardboard box. But then at about three times the price of the old version I'd expect a few improvements!

Initially you play the part of the Mission Controller, your aim being to make the right decisions about launch and landing thus scoring bonus points. These decisions include choosing launch site, preparation time, landing site, and gambling against inclement weather conditions which could cause launch delays (and cost you bonus points).

Overall, I found this section of the game rather pointless in more ways than one! The authors seem to have made it almost impossible to score any bonus points here, and no amount of skill or strategy on your part seems to change this. Points are lost when electric storms cross the launch site, and this seems to happen virtually every time you play. Very demoralising!

At this stage you take the pilot's seat. Immediately before launch, the heatshield slides back giving you a view corresponding to the chosen launch site. (How come, if the Shuttle's sitting vertically on the launchpad?) As the Shuttle lifts off, the view scrolls down giving occasional glimpses of clouds and airships (Airships? Yes, airships!) before the sky darkens and stars appear.

In the centre of your control panel are three mouse operated 'thermometer style' slider bars, controlling pitch angle, wing roll angle, and thrust power. You have to continually adjust these during the launch to stay on the ideal launch trajectory, which is shown graphically on a display alongside the sliders. As the launch progresses your actual trajectory is plotted along with this, so you can see how well (or badly!) you are doing. Points are accumulated for staying on track.

The control panel includes digital displays showing current altitude, velocity and time into mission. The launch trajectory is marked with ten significant 'events', which should each

'too complex'

occur at a given time, altitude and velocity. Hitting them at the prescribed values is not easy, even at the easiest of the six difficulty levels. If you do manage it, you get more bonus points. Certain events have to be achieved at a specific roll angle or thrust setting, and several others require you to initiate an action via the keyboard, such as releasing the external fuel tank. Again, this seems unreasonably difficult to achieve – but perhaps I'm just getting old and my reactions aren't what they were!

However badly you handle the launch, you eventually find yourself in orbit. The screen now shows the Orbital Manoeuvring System control panel, used to rendezvous with the wayward satellite. Three digital displays show how far ahead/behind, left/right, or above/below you the satellite is. By firing the appropriate manoeuvring engines using those sliders again you can change the Shuttle's orbit to match that of the satellite. Achieve this before all the OMS fuel has gone and you're rewarded by the satellite drifting into view and – you guessed it – bonus points!

The next screen shows a side view of the Shuttle, with the satellite and the Earth in the background. With a few deft mouse clicks you open the Shuttle's cargo bay doors, get a crewman suited up for a space walk, and guide him outside propelled by his nitrogen fuelled jetpack. By clicking on any of the jetpack's eight direction controls you can steer your man to the satellite. You have to attach him to the top of the satellite and then get him to tow it back into the Shuttle's cargo bay. Yet again this isn't easy.

Every time you fire the jetpack, not only does your man move in the direction chosen, but the satellite randomly changes ITS direction of movement. Also, your man can only move at one speed. Clicking twice on the same directional control doesn't make him travel faster, so he can't catch up with the satellite if it's moving away from him. Nor can you make him stop by firing the jetpack in the opposite direction to his current motion. All very unscientific, illogical, and frustrating.

I never did get the hang of getting back to Earth. You have to 'de-orbit' the Shuttle by flying it through an S-turn to slow it down. The idea is similar to the launch, where you have to keep as close as possible to a predefined path shown on your instruments. Deviation from this causes the Shuttle to heat up – deviate for too long and the Shuttle gets frazzled.

Control is via the three sliders again, this time controlling wing attitude, height, and air brakes. So far, I've managed to fly it round the first bend of the S-turn, but then the program drives ME round the bend! No matter what I do I always seem to end up as a fireball.

The final screen is rather odd. You still feel you're in the pilot's seat of the Shuttle, but through the windscreen you see a rear view of the Shuttle as it glides down towards its landing site. Using the same controls as for de-orbit you have to guide the shuttle down onto the runway, remembering to lower the landing wheels before you touch down, of course. The instrument panel now shows side and plan views of your approach, plotting your progress down onto the runway. Perversely, there's no predefined path marked on these displays, so it's a bit hit and miss – usually miss, as every flight I've made has terminated abruptly 120 feet *under* the runway surface!

In conclusion, I was disappointed by Shuttle II. It doesn't seem to know whether it's a game or a simulation. As a game, it seems too complex and too difficult to score points, even at the easiest level. As a simulation it has too many game elements and chance items. It could be much improved by better instructions, particularly with respect to descriptions of the slider controls and how you should use them in each phase of the flight. •



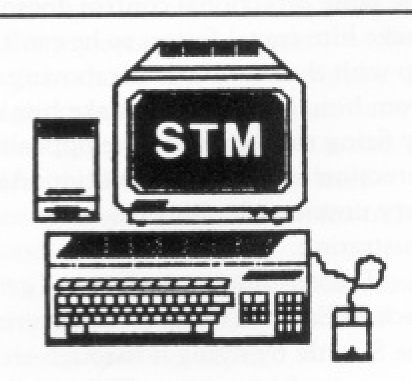
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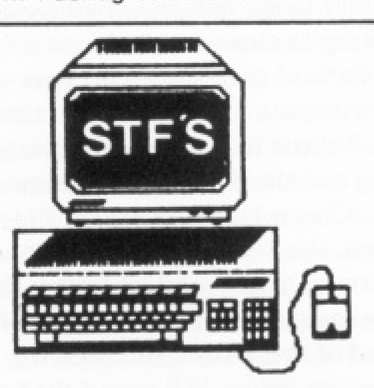
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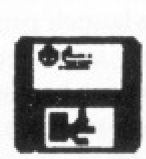
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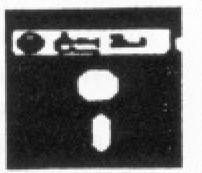
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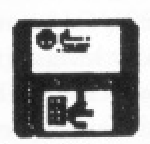
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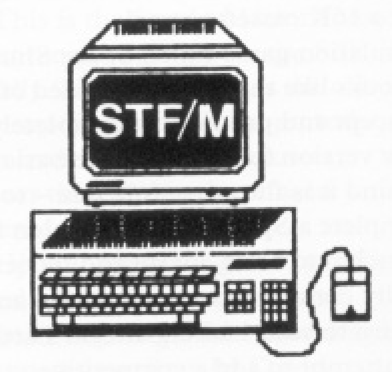
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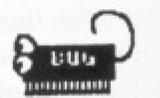


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THE ELECTION PROGRAM
Software Express
£29.99

Reviewed by Les Ellingham

How many programs can you think of that can be described as truly original? Almost every program nowadays, whether game or business, is based on something someone else has already written but, as far as the ST goes at least, you really haven't seen anything like The Election Program.

Before you moan on about boring politics let's be honest. Even if you don't actively follow politics, the General Election results are fascinating, interesting and even exciting aren't they? Be honest, you either watched the box or read the papers, didn't you? If you have even the remotest interest in politics or statistics or just trivia then I guarantee that you will find The Election Program interesting or even exciting. I did and I couldn't care less who gets into power!

The program is basically a huge database of the results of the most recent General Election (the version reviewed came out before the 1987 election and so refers to 1983) which it presents in any fashion you choose. You can look at the country as a whole or break it down into different areas. Facts and figures can be presented as plain text or graphically illustrated by constituency in a superbly colourful graphic manner that should be a lesson to anyone writing database software. With this approach, anything can be made to look interesting. You can select details of any constituency in the country which will, in addition to giving the appropriate results, show a map of the constituency in its area. You can play at swingometers by changing the percentage vote of each party to see what effect small or large swings might have and can watch the results in superb dynamic fashion 'as they come in'. An on-screen map show seats being held by each party with 'flashes' such as 'Labour takes Lewisham' or the like as seats change hands.

Opinion Poll results can be entered and saved to disk and then be averaged or manipulated in other ways. By-election results can be included as they happen and projections made on the likely result if applied nationwide. Constituencies can be found where there are small or large majorities or three way fights or low or high turnouts. In fact the list goes on and on. Almost every way that you can think of to manipulate the data is included.

I am not really interested in politics but I found this an intriguing, fascinating and interesting piece of software. It can be used just for fun or as professional tool. Anyone involved in statistics or education should certainly have a copy. If you are just interested in facts and figures you should have a copy and it's even worthwhile if you just want to see how exciting a database can be made to look.

Updates are promised after major elections so the product should have a long life. Even though it's too late for this year's Election you can still play 'what if' games and add the By-election results as they come in.

I bet you have seen the advert for this and thought .. boring! If I had seen an advert concerning a program about politics I would have turned away too but, having booted this up again for this review , I can honestly say that The Election Program holds it interest and is well worth a few hours of entertainment / education every so often. How many games that you have paid twice the price for will be as relevant in four or five years time as this program? The funny thing is, it is not a game at all, it is a serious statistical tool, but if Peter Snow can leap about like a small boy with a new toy why can't you? •

PRO SPRITE DESIGNER
Eidersoft
£39.95

Reviewed by Elliot Stein

From Eidersoft comes a program which assumes that the programmer who's interested in creating sprites is also an incredibly talented artist with the mouse!

The lack of drawing tools needed to create the sprite's design is shocking for a program selling for £39.95, especially after programs such as the original Degas and Neochrome have been using the technology for over two years. The drawing screen is a 32 × 22 grid representation of magnified pixels resembling boxes, which are similar in appearance to Degas' zoom option screen. To create a new sprite one must choose a colour, move the cursor onto one of the boxes in the grid and click. The box changes to that colour. It's good for minor touch-ups but to create a quality and precise sprite image it's grossly inadequate and fairly time-consuming. Once the sprite is created however, manipulating it is fairly straight-forward.

The sprites are moved by the principles of frame by frame animation. For example, if you wanted the sprite of a little girl jumping and waving her arms, you would first draw the image of the little girl on the screen as you'd want her to appear in the very beginning of the sprite. This still image would be called frame one. You would then click on the control box near the side of the screen to advance to frame two. Using the frame copy option will duplicate frame one's image onto frame two. Now you merely change frame two by slightly altering the position of the girl. The entire process is repeated over and over, frame by frame, until the illusion of motion is created when all the frames are played one after the other.

In order to achieve a fluid motion, Pro Sprite Designer also requires several frames per second to be drawn. Try to imagine the long tedious work in producing a sprite of several seconds or even a minute long! The space ship sample given with the disk is made up of 46 sprites but using this program, I can't imagine it taking less than several hours to produce. If you're willing to spend the time creating the sprites, you can play them forward or reverse, reposition them on the screen, change the order of the frames, alter the speed and the timing between frames, or even edit and delete specific frames.

The save and load options allow you to use another program on the disk to incorporate your sprites in ST Basic, Fast Basic, Assembler or C programs.

So far, there isn't an abundant choice of sprite creation programs on the market for the Atari ST and if you need a sprite kit, this will do the job creating quality sprites provided you are willing to use the primitive, time-consuming, tools of the program. Coming soon however is a graphics package from Rainbird Software and it might be best to wait before making the decision of which package to buy. •

JACKFONT V1.1
Vogler Software, £49.95

Reviewed by Matthew Jones

Jackfont is a monochrome-only utility program designed to edit fonts used by any program which uses GDOS, or GDOS fonts (at the moment only a few like Easydraw, Degas Elite and Fleet Street Publisher allow multiple GDOS fonts). As such, it is a God-send as until now there has been no good font editor available either on the Atari ST or the IBM PC.

Jackfont has three windows that it uses for font editing. The main one is a large grid display (from 5x3 to 72x80) typical of font editors and the second large one (the Select Box) contains a full 256 character display from which the character to edit is selected. There is also a small 'actual size' window in which nine variations (bold, underlined etc.) of the character can be displayed. The process of editing a character is to select the character in the Select Box, and then use the mouse in the main editing grid to invert pixels.

Rolls, shifts, mirrors and flips can also be done and three fonts are supplied for experimentation. When the character is to your satisfaction, you select another to edit – the edited character is copied back automatically. When the whole font is finished, you can save it back to disk (choosing another filename if you desire).

Dialogs are available to allow setting of all the various variables associated with a GEM font, including the point size, the Top, Ascent, Descent, Bottom and Half values, the file format (Intel or Motorola), proportional, skewing and more. A very useful dialog is an automatic re-sizing facility, which stretches the current font to make a complete range of sizes easily. Also available is a test screen where the current character is inserted in a sentence and displayed in several type styles. It is such a pity that this is not complimented by a complete display of all the font's characters on-screen at once, as this would be invaluable.

The manual starts with a most educating overview of fonts and is a credit to Vogler. Only a few bad points (no pun intended) – the manual describes the 'ID Number' as 'purpose unknown, is used internally by GEM. It is best to skip this item as GEM doesn't appear to care what its value is.' As a programmer who has used GDOS (FaSTcom) I happen to know that this is how a programmer actually selects a particular font. In a general CAD or DTP program this is not apparent, but when you want only one font, (e.g. viewdata) you need to know the fond ID to select it. Different sizes of an ID are selected with point sizes.

JackFont has some awkward techniques of item selection, and one is acknowledged in the manual. Because the selector and editor are in separate windows, you must first click in the window before you can work in it. In the case of the edit window, if you start clicking too soon, the first click is mis-understood, and you must click on another pixel before it will start editing. The manual tries to excuse this, but it is really bad programming, and should be fixed. Also the Select Box window should not 'top' when clicked in, but should just work out where you clicked and set up the appropriate character for editing. Topping the window continuously soon wears you out, and there is nothing else to be done in the Select Box anyway. A key to step to the next / previous character would be useful here. Also needed is auto-update of the small 'actual size' screen.

If you have one of the programs mentioned at the beginning of the review, or are interested in GDOS fonts, then this program has nothing to touch it on the market at the moment. I shall be using it often, though I look forward to a new version with the irritations removed. •

SHORTCUT V1.0
Vogler Software, £29.95

Reviewed by Matthew Jones.

ShortCut is a desktop accessory designed to make life easier. It does this by looking at the keys that you type and if it spots a sequence that you have previously defined, it automatically backspaces over it and enters the full version. This is similar in operation to the Thunder! and JackSpell spelling checkers. The principle is that you define a list of shortcuts and their replacements, and this will speed up your typing. For instance, you might enter 'dir' as the key word, and 'directory' as the full version. Vogler recommend using a special character at the end (like '#') to stop 'dir' being replaced in other words like 'dire'.

ShortCut can be used for any text operation, not just word- processing. The default selection provided with ShortCut is a large list of GEM library functions for programmers. Any GEM application that accepts text can benefit from ShortCut (even dialog entries are examined).

ShortCut is not however without problems, but none are major and most are avoidable. The first is plain annoying. Some programs (First Word being one) cannot input text as fast as ShortCut can send it, and thus a delay must be set. The annoying part is that the speed is not saved in the keyword files, thus every time you start ShortCut you have first to change the speed to that required. Another problem is that ShortCut does not queue other keys that you type while it is 'auto-typing'. This means that if you hit keys during the auto-type they appear in the middle of the word, thus causing garbage. To be able to continue typing straight after a keyword and still get the correct sequence would be much better. The most major problem is that you can enter a blank keyword, and as soon as you click on ADD, the replacement starts pouring into your application continuously. Stopping it takes several minutes of frantic attempts to hit the CLEAR button of ShortCut to kill it. Another disconcerting problem is that it does not appear in the Desk menu at power on, but waits until the first application is run. I cannot think of any reason for this, and find it annoying as I thought ShortCut had not loaded the first time.

The 12 page manual is nothing to write home about, but does its job adequately. The program is quite intuitive to use, and so the manual will not be needed much anyway.

Overall, ShortCut does do its job well, and for someone who does a lot of repetitive or complicated typing (sequences up to 30 characters), ShortCut is well worth looking at, but if you have any other keyboard enhancers make sure it will work with them. •



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K-COMM 2
Kuma
£49.95

Reviewed by John S Davison

K-COMM 2 is an uprated version of an earlier Kuma product. It consists of two main GEM based programs, K-COMM and K-VIEW, now supporting viewdata type systems as well as ordinary bulletin boards and similar services. From its specifications it looked just the job to partner the Miracle Technology WS4000 intelligent modem I had been trying out.

It comes in the flimsy cardboard packaging common to the K series of Kuma products. Inside, there's a single sided master disk and a 56 page instruction booklet. The booklet is quite well presented, containing screen shots as well as text, but unfortunately I found it to be unhelpful, if not confusing, in places.

INSTALLATION PROCESS

Before you can use the program you have to prepare a 'working disk' from the supplied master by going through an installation procedure. This has the advantage of preserving the master as a backup. The installation process is painful on a single drive system, involving over 90 disk swaps!

If you damage the working copy, you can only re-install the master onto your original working disk. And you must never reformat that working disk, otherwise the re-installation process won't work. This is Kuma's version of copy protection. Once installed, K-COMM and K-VIEW may be loaded from the working disk.

Before using K-COMM you have to configure it to suit the service you want to use. This involves setting all the usual terminal parameters, such as baud rate, number of data bits, stop bits, parity, and so on. One unusual setting is 'debug' mode, where incoming ASCII characters with a value of less than 32 are displayed as control characters rather than being acted upon – useful for finding out what control characters a particular host is using. There's also a 'description' entry, which allows you to give a title to the configuration, reminding you what the configuration is for next time you look at it. It's also used as an index entry in your list of saved terminal configurations – much better than trying to remember file names.

As well as configuring the terminal program you also have to set up the modem type. The program has support for dumb (manual) modems, pulse dial modems, and various makes of intelligent modem, including Hayes compatibles. This gives you facilities for setting up the command strings to be sent to the modem at specific times, for instance auto-dialling and disconnection. Once the basic command strings are set up you can automate their use further by using some of the program's more advanced features, such as the auto-logon facility.

AUTOMATED PROCEDURES

Auto-logon is designed to automate the whole process of logging on to a remote system, including automatically configuring the modem, dialling the number, establishing the link, and supplying the logon identification and password information. It's done by defining expected 'prompts' and their corresponding 'responses'. K-COMM watches the character stream coming in from the remote system and if it finds a match with one of the prompts you defined, it sends back the matching response. You don't need to do anything until the system is ready for productive use. This could be a great timesaver if you use lots of different remote systems requiring different terminal configurations and logon procedures.

K-COMM has many other features, including file uploads and downloads (with XMODEM if required). It can 'snapshot' any screen into a buffer which can then be viewed at any time – useful for capturing command menus for quick reference on systems you're unfamiliar with. It can also log everything to disk for later review or printing. The program has a facility for displaying disk files, so you can look at previously downloaded or log files without leaving the program. There's a single line editor for offline preparation of particularly complex lines of text, and facilities for auto-answer of incoming calls and allowing the remote user to upload or download files from elsewhere.

THE PROOF OF THE PUDDING....

Sounds super, doesn't it? Unfortunately, it doesn't deliver what it promises. I didn't get on well with it at all. The instruction booklet turned out to be woefully inadequate in places and I tried to get round this by invoking K-COMM's online help facilities, but the Help files turned out to be identical to the instruction book! The basic comms facilities worked fine, but I had great trouble with the auto-logon facility. A phone call to Kuma revealed there have been problems with getting K-COMM to work with the WS4000 modem. They provided me with modem configuration details which partially solved the problem. At least it made the auto-dial part work, but I still couldn't persuade the program to actually perform the logon automatically. I gave up after several frustrating sessions of experimentation and many wasted phone calls.

Attempts at downloading files from bulletin boards were also less than successful. The software appears to do all the right things, reporting number of blocks transferred, writing to disk, etc., but when I came to use the files I found them to be incomplete. Log files, too, suffered from missing data and when I tried to display them using the program's display facilities, it often locked up on me. On one occasion the program actually crashed.

In frustration, I switched to K-VIEW to see if this was any better, using the PRESTEL demonstration system as a test vehicle. This worked OK until I tried to save a frame to disk. Result – a TOS error! At that point I gave up in disgust.

K-COMM 2 managed to turn a great specification into a great disappointment, and can't be recommended in its present state. It proves once more that you shouldn't judge a program by its specifications or glossy advertising blurb. Perhaps with a lot more fiddling about, or with additional information from Kuma it could have been made to work properly. But surely, this shouldn't be necessary on a piece of software costing nearly £50?

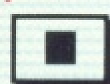
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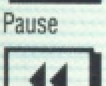
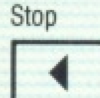
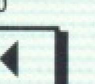
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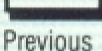
VCR style symbols


Pause Stop First

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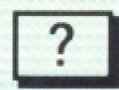




Next F/Forward Last

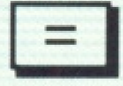
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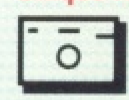
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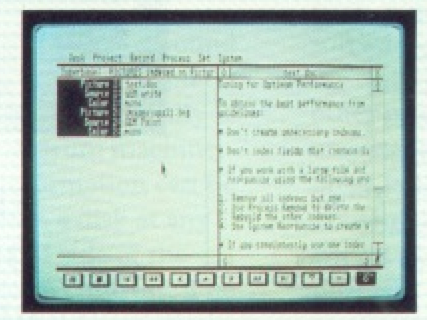
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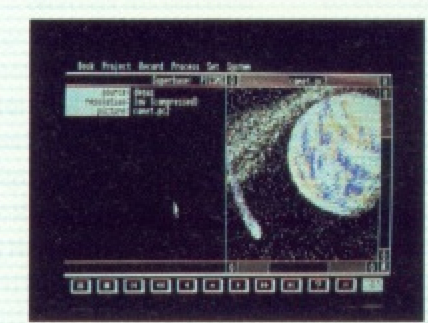
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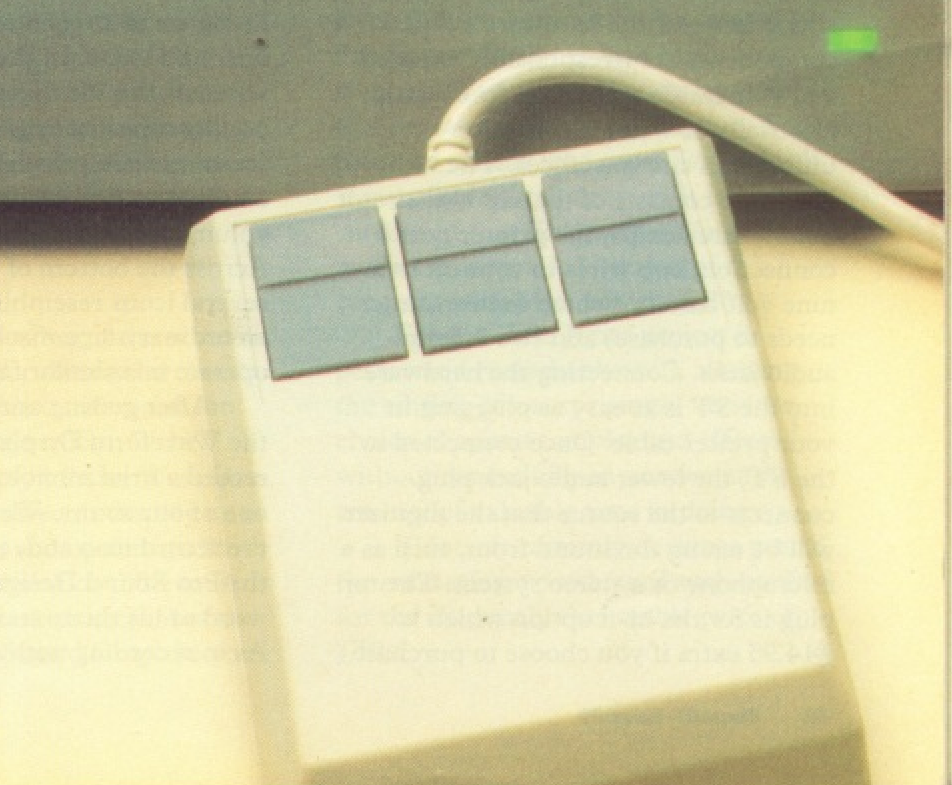
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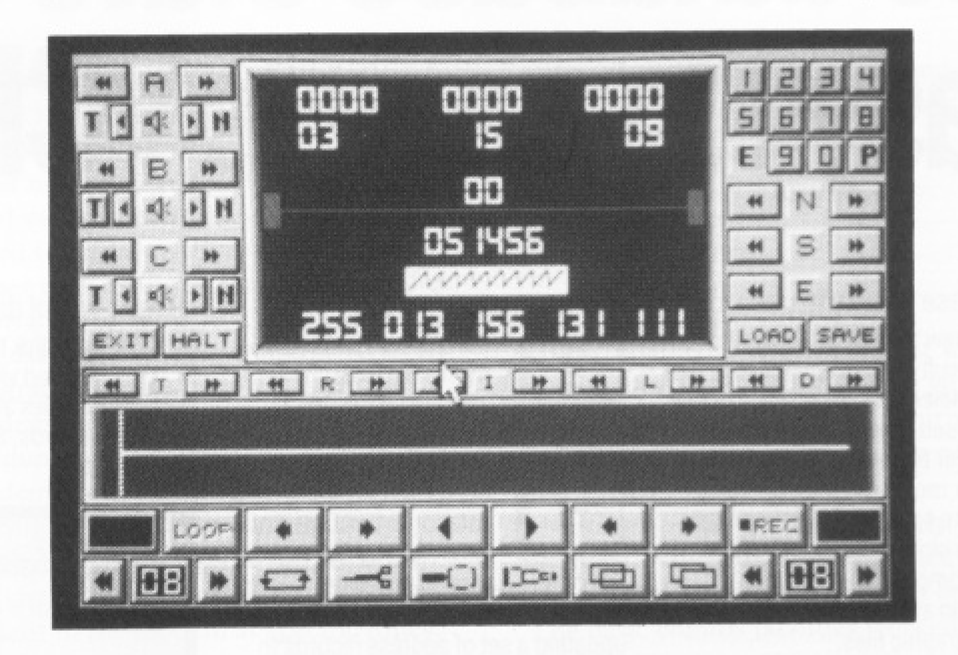
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PRO SOUND DESIGNER
Eidersoft
£57.44

Reviewed by Elliot Stein



Elliot Stein used the Pro Sound Digitiser in a theatrical production. Did it work?

Perhaps the best way to review software is under actual field testing conditions and I had just the project in mind! That project is the premiere of a new stage show in the Edinburgh Fringe Festival that I'll be directing entitled 'The Ballad Of Halo Jones', based on the popular series from 2000 AD Comics. Unique to this show will be the extensive use of computerized special effects, all being produced by the mighty Atari ST.

We decided to use the ST to produce sound effects for the show as well as to record, edit, and manipulate several voice-over narrations. Since computers are capable of only digital sounds, a digitiser such as the hardware supplied with Pro Sound Designer or it's competitor 'Replay' (by Microdeal) must be used to bring the analogue sounds of the 'real world' to the ST.

First thing to do is to plug in the hardware, however unlike the hardware portion of Replay which very conveniently plugs into the ST's side cartridge port, Pro Sound Designer connects inconveniently through the ST's rear printer port. For many ST users, like myself, who use their printer a great deal the constant plugging and unplugging of the Pro Sound Designer's hardware and your printer cable will be a constant and irritating nuisance. In addition as Eidersoft do not yet have the plastic cases to their sound sampler the hardware's components are irresponsibly exposed and vulnerable to damage from static electricity as well as from other unforeseen circumstances. The hardware consists of the exposed circuit board, three chips, the printer port connection, two wires to connect to a nine volt battery (which the consumer needs to purchase) and two 3.5mm audio jacks. Connecting the hardware into the ST is as easy as plugging in your printer cable. Once connected to the ST, the lower audio jack plug connects to the source that the digitiser will be taking the sound from, such as a microphone or a stereo system. The top plug is for the hi-fi option which is £14.95 extra if you choose to purchase the additional hi-fi upgrade kit. This will allow you to play your sound samples back through your stereo system instead of through the ST monitor's low fidelity speaker.

ACTION!

For the Halo Jones project, we decided to use the hi-fi option to send the sampled sounds to a four track tape recorder. The clumsy, aesthetically dismal design of the external hardware is quickly forgiven as the Pro Sound Designer software is booted-up. The main work screen is probably the best designed and most attractive screen of any serious application software for the ST or most other computers. Unlike Replay's restrictive keyboard-only operated screen, the Pro Sound Designer features mostly mouse operated icons. In the centre of the screen is the Waveform Display, an oscilloscope-like representation of the sound entering the ST from the external source which is used to set the volume levels of the incoming sound. Across the bottom of the screen are several icons resembling the controls on an ordinary tape machine and which operate in a similar fashion.

After getting our sound levels from the Waveform Display, we began to record a brief monologue performed by one of our actors. We merely clicked on the record icon and, as the actor spoke, the Pro Sound Designer recorded every word of his thirty second monologue. As in recording with other types of media, the speed used to record the sound is relational to the quality of the sound. On a normal tape machine, recording at a high speed would give far better quality and clarity than on a slow speed and the same holds true for sound sampling on the ST. Sampling at the high rate of 30 kHz gives far crisper and cleaner sounds than at 3 kHz. There are consequences in using faster speeds though. The faster the speed used to sample, the more memory is consumed which is, I suppose, similar to a tape machine where higher speeds use up more recording tape.

Pro Sound Designer conveniently offers a choice of all speeds from 3 kHz to 30 kHz. We chose the default speed of 8 kHz which enables roughly 30 seconds of memory storage on a 520 ST. Once recorded, selecting the Playback icon on the bottom of the screen enabled us to listen to the sample that we had just recorded. There is even a reverse play option which plays the sample backwards! To halt the sample before it's playback is finished, you may press the space bar and any other key will repeat the sample. Just as recording has a convenient mouse-operated speed selector, the playback has an identical control enabling a versatile selection of playback speeds from 3 kHz to 30 kHz. For the voice of the actor, who portrays the voice of a computer which is operated by intelligent mice, we decided to play back the sample at a faster speed to achieve a higher-pitched distorted voice.

CHANGE THE SOUND

Once a sample is recorded, the long rectangular window above the controls displays the wave of the sampled sound. Over the sampled sound display is a bar which displays the current positions in memory of the left and right memory pointers as well as the distance between both pointers. The two memory pointers are used in editing the sound sample and are controlled by the four pointer adjustment icons which allow the pointers to move either way across the displayed wave. To edit the sound display, the left pointer is moved to the beginning and the right pointer to the end of the segment. The wave between the pointers is the segment which will be edited. Pressing Reverse Sample reverses the sample between the two pointers and allows you to play it backwards. We used it to twist a segment within a song to create a very disturbing effect in the music.

'possible use in film ... television ... theatre'

Cut allows you to delete a section of sample wave for fine editing of the sound sample. Transparent Copy allows one to overlay the sound between the two pointers onto another section of the sample. This can be used for creating echoes, harmonies, or even building the illusion of thousands of people laughing from one solitary laugh. We used this function in Halo Jones to create the illusion of the noises of a crowd of thousands of people from a sound sample of two actors talking in a studio! Block Copy allows cut and paste operations between various sections of the sampled wave. It also allows for the chronological re-arranging of the sample's ingredients. For better accuracy in editing various sections of the sample, the Magnify and DeMagnify keys allow zooming-in or zooming-out on any specific portion of the entire sound wave. For example, one may choose to view the entire wave for a two minute sample or choose to view a detailed enlarged fraction of one second of a sample. Using the Magnify and Cut keys, we were able to remove a very brief space between two syllables of a word from an actor's speech which had a distracting background noise on it. The final control on the bottom of the screen is the Loop option which allows the playback to be heard over and over.

AUTOMATIC OPERATION

The function keys display is on the left hand side of the screen. Used to program the ST's function keys so that a selected part of a sample may be assigned to each key, it remembers the speed and location of the sample and plays it back at the touch of it's designated key. Using the many sound samples included on the Pro Sound Designer disk, it is possible to easily create an eight button drum machine. The function key's information can be saved to or loaded from a disk at any time. On the right hand side of the screen are the waveform controls. The Automatic Play icon enables an outside noise source to trigger playback. To use this option merely set the sound level that you want to trigger-off the Automatic Play then click on the Automatic Play and the Play icons. If you set the level for automatic play at seven, then as soon as a sound makes the Wavelength Display hit seven, the prepared sample will play back automatically. The instruction manual which comes with the program suggests using this option as a burglar alarm or as an answering machine.

There is also an Automatic Record option which operates similarly to the Automatic Play It's extremely useful for recording something which may have a long pause at the beginning. In the Halo Jones project, we used Automatic Record so that the sampler would begin recording as soon as the actor begins to speak. This helped relax the actor, and he was able to begin when he was absolutely ready without having to be cued. A Lock option allows the Automatic Play and Record functions to reset themselves and continually operate from sound control.

EDITING THE SOUND CHIP

Also on this section of the screen is the Hi-Fi output for those who choose to purchase the additional option, an option to change the colour of the waveform indicator, a Pause Waveform which freezes the screen's display until it is pressed again, and options to Save and Load sampled sounds. The most unusual function on this section of the screen is the Edit Sound Chip. As you click on the Edit Sound Chip option, a new screen lowers across the sound sampler screen. Both the Edit Sound Chip and the Sound Sampler are entirely different programs. None of the sampled sounds can be used in this section of the program since sounds are produced by direct editing of the ST's internal AY-3-8910 sound chip. On all 16 registers of the three sound channels, the sound editor allows for control of pitch/ frequency, sound envelope shape, tone, noise, sustain time, noise frequency, as well as software register controls.

Though there have been many other programs which allow for the creation and manipulation of sound and noise in this way, many of them public domain programs, this is the best designed and most easy to use. A different set of function keys allow you to allocate to them different sounds and noises and a save/load choice allows for disk storage. For the Halo Jones project, we were able to use the Edit Sound Chip Program to create sound effects of laser guns, explosions, and background noise of heavy machinery.

To use the various sounds created in your own programs, there is a utility on the disk that allows you to turn them into a format usable by ST Basic, Fast Basic, C, and other assembler programs. There is also a routine for using sound samples in your own programs.

CONCLUSION

Pro Sound Designer is extremely good value for money, with possible uses in many different aspects of film, radio, television, or theatre production as well as computer programming, personal entertainment, and music. Even though sound samples created by Pro Sound Designer lack Midi compatibility, it is still an invaluable tool for studio or live production. For those musicians who must have a Midi compatible sound sampler, it is rumoured that Eidersoft is planning to market an upgraded version of this program with Midi compatibility.

For the Halo Jones project it performed remarkably well, allowing the editing of a surprisingly versatile choice of sound samples and effects without consuming an unreasonable amount of valuable time in doing so.

Eidersoft certainly deserves praise for marketing a product of such quality for the extremely reasonable price of £57. •

Brown's Musical Xtravaganza

by Peter Brown

Hi there, music lovers. Brown here. You know when I think back longer than I care to remember I have always had a desire to bring together my two great loves – computers and music. I am a guitarist and a keyboardist by training but my trusty 1982 Atari 800 was so limited in what it could do in the musical field that, gradually, I lost interest in all computer activities bar an American program called 'Financial Wizard' which I used to keep my bank manager at bay.

Developments in digital synthesis for musical instruments reawakened my love of the keyboard and the creation of the Musical Instrument Digital Interface (MIDI) soon wetted my appetite for a computer controlled keyboard. I could now blend my computer and musical abilities together into an all consuming pastime. I could make a widow of my long suffering wife, orphans of my three little kids and alienate a significant proportion of my friends. A martyr to computer controlled musical synthesis.

So, earlier on this year, I sat down to look at what was available. The one and only MIDI capable computer was the Atari ST and thus it became my logical choice. After further deliberations my eventual decision was to acquire an Atari 520 STM+, an SM125 mono monitor and an AST 600 twin 1Mb drive. The larger RAM memory would allow the manipulation of bigger pieces of music, the monochrome display would be easier on the eyes and the 1Mb drives would transfer the musical data all the faster.

I got my system in July after a very annoying three month wait. I had opted to do business with Bath Computer Shack where Di and Steve did their best to get my system together completely unaided and unabetted by a hopeless AS+T. Such was my frustration that I contacted AS+T to find out what was causing the delay. During the course of the conversation I found out that they were still advertising a drive combination which I was told was no longer made (Twin 1000C with PSU) but I stuck to my decision to wait for the FD 600 and paid dearly for it in terms of the quarter year wait. The Bath (now Trowbridge) staff were more than aware of my dissatisfaction and were more than kind by way of extra software sent with the system.

The next round of decisions lay in the choice of synth. I checked out the Roland Alpha Juno 1 and 2, the Yamaha DX 21 and 100, and the Casio CZ 1000 and 3000. Purely on a value for money basis I opted for the CZ 3000. The choice of timbre (voice) facilities is very similar to the Yamaha DXs but the CZ was £100 cheaper. I also felt that the CZ was easier programmed than the DX. A fellow musician put me off the Rolands but it is down to personal preferences in the final analysis. While looking out for synths I espied a tidy little Yamaha RX 21 drum machine going for the right price. Both the CZ 3000 and the RX 21 are equipped with MIDI and use digital sound sources. I could now connect the ST, the CZ and the RX all through MIDI. Only the software needed choosing.

The more I checked the software out the more I got confused. There is a plethora of music programs available for the ST and quite a few are MIDI capable. I felt that the handiest item would be a sequencer that offered a comprehensive range of MIDI operations. A sequencer is like a multi-track tape recorder which arranges music stored on disk to be played as the composer wishes. The composer can play a piece in its entirety and save it for later modification or he can put the piece in track by track, doing bass, harmony and melody separately in sync. He can then play the individual tracks back as one song. Software for the CZ series appeared to be cheaper than the DX series, although a good many programs are not dependant on the synth. I had chosen my synth correctly! Hybrid Arts software was what I was looking for and so I went for EZ Trak which is a 20 track sequencer with enough facilities to see off the nearest rival. This company also produce full blown professional packages that are employed in top recording studios by some of the leading lights in the music industry. With a pedigree like that I revelled in my choice.

With the growing interest in hooking ST's up to synthesisers, we felt that many readers might want to dip their toes into the swirling musical waters so we asked a musician to let us know what he put together. It wasn't Midge Ure so read on, you might be able to afford it!

I rejoiced when Santa came early. After a bit of plug fitting, my great dream came to reality. I connected the computer to the synth usjng cables from the ST's MIDI out to the CZ's MIDI in and from the CZ's MIDI out to the ST's MIDI in. This arrangement would allow the transfer of MIDI data to and from the computer and synths. I could play a tune on the CZ and the ST would hold it in RAM and then play it back ad infinitum (or ad nauseam!). EZ Trak could also save any tune or composition to disk enabling budding Bachs and developing Dvoraks to retain their opuses for electronic posterity. It should be noted that an equivalent multi-track tape recorder could put you back thousands of pounds so sequencers like EZ Trak are fantastic value. I hope to say more of this program and it's ilk in future issues.

So what does the future hold. Well music lovers, I hope to purchase a program called CZ Android which will allow me to program timbre data into the synth and save it to disk as part of a patch library. This is another Hybrid Arts product so I am expecting something of a very high standard. I may upgrade EZ Trak to a more pro affair called SyncTrak which caters for 60 track recording and lots, lots more. I will not indulge himself here for fear of spoiling forthcoming articles. From a hardware aspect, I will be investing in a small Tascam line mixer to allow simultaneous playing of the synth and the drums. I hope to mix the output of the synth with that of the RX 21 drums. This composite stereo signal will be fed to the AUX in of my domestic HiFi amp. At present, I still have not heard my little collection of digital delights in full. Someday, not too far distant, I will savour the perception of something created by Brown for Brown alone!

Catch you later.

•

Next issue ... An in-depth look at Super Conductor, one of the cheapest music packages. Is it good enough or do you have to pay as much for the software as for the ST?

VIP PROFESSIONAL

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'LOTUS PLUS GEM'

Probably the most impressive program to have been released so far for the Atari ST range, VIP Professional is an extremely easy to use, integrated spreadsheet, database and graphics program which is identical both in features and commands to Lotus 1-2-3™. To give you the best program possible on your Atari ST, VIP Professional integrates the three essential applications of Lotus 1-2-3™ with the smart face of GEM. The same spreadsheet analysis, information management and extraordinary business graphics are all combined in one easy to learn, affordable package. What's more, VIP Professional not only has all the features of 1-2-3™, you can also type the same commands to do the same things. Or, better still, you can use a mouse to make it even simpler! VIP requires only one disk drive to operate and also works with a hard disk drive. It is compatible with both monochrome and colour systems. Probably the most surprising feature of VIP Professional is not its total compatibility with Lotus 1-2-3™, nor its ease of use with the GEM environment, but its price. Lotus 1-2-3™ for the IBM PC AT costs £395 (+VAT=£454.25), whereas VIP Professional for the Atari ST range of computers is a mere £199 (+VAT=£228.85). That's nearly HALF PRICE!

1 SPREADSHEET

VIP Professional was modelled after the powerful, best selling Lotus 1-2-3™ program. It has every feature, every command of that program. In fact, the experienced 1-2-3™ user will feel right at home using the same keystrokes. But this version is made even easier to use by adding the user friendly face of GEM, so the beginner can use it right away. If you want to do your home budgets, financial planning, or sophisticated business inventory control or budget modelling, VIP Professional will fit the bill. And you can freely use 1-2-3™ or VIP Professional files created on other computers in VIP Professional on your Atari ST. And Professional is not only flexible, it's powerful too, with a full 8,192 row by 256 column worksheet to use with up to a massive 4Mb of memory. (Note: Lotus 1-2-3™ has only 2,048 rows).

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- VIP is currently available for the AMIGA, ST and APPLE IIc, IIe and IIGS.

OFFICIAL UK VERSION

The official UK version of VIP Professional has a pound (£) sign as a standard part of its character set. Other versions have also been imported unofficially from the USA and have a dollar ($) sign instead of a £ sign. These versions will not be supported by the UK distributors or their dealers. Ensure that the VIP you buy is the official UK version, not an unofficial import with incorrect characters.



VIP Professional is available from Atari ST Dealers throughout the UK. If your local dealer does not have VIP in stock, it can be obtained by mail order (P&P free) from:

SILICA SHOP Ltd, 1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX Tel: 01-309 1111

All comparisons made to Lotus 1-2-3™ are to version 1A. E&OE

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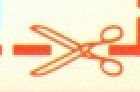
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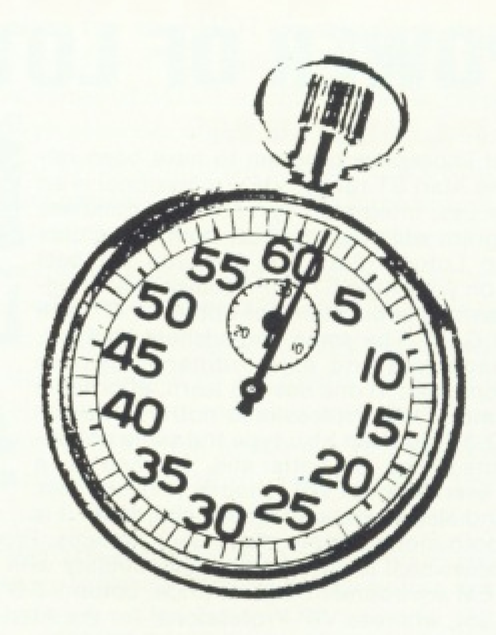
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INSTANT CHARACTER SETS



'Initialising ... please wait' Now you don't have to! Les Howarth has an instant solution

The great majority of programs use custom character sets but when a character set is created in BASIC there is usually an annoying long wait while the data is transferred and read into the new character base accompanied on screen by those famous words: "Initialising .... Please Wait"

Most programmers use the long winded loop FOR I=0 TO 1023 to construct the new set. It works but sometimes seems to take forever. There are two ways to speed up the process. Disk drive owners can create a character set as a file on disk and have it load into the program quite fast using an IOCB block but the second method is something quite different.

Suppose the entire character set was stored in a string? The set would then be instantly available because of the Atari's super fast string handing. Sounds good but there are problems. Unfortunately the Character Base register (address 756) requires the character set to begin on an even number of pages, that is the address of the string would have to be absolutely divisible by 256, otherwise the characters would be all wrong. The Atari stores strings in a 'dynamic' form so that the actual address of each string changes as your program is developed so this method cannot be used,r can it? Supposing the address of the character string was changed to point to a reserved part of memory, (with an even number of pages)?. It would then remain at that position because the program being written would not affect any protected memory. We could POKE the address of the reserved memory into CHBAS and it would work! The character set would truly be instantly set up.

HOW TO DO IT

Believe it or not you don't have to work all the details out for yourself. The accompanying program can be used without having to understand the workings of it. All you need to do is alter the data in CC$ for your own custom set.

Each line from LINE 31000 contains 10 characters so it should be fairly easy to work out the position of whichever character you want to alter. Remember that all the upper case characters are stored first then the Graphic and lower case letters.

The first character is CHR$(32)- a space, so line 31000 stores the 10 characters from CHR$(32) to CHR$(41). Line 31010 stores from CHR$(42) to CHR$(51) and so on.

One word of WARNING. It is vital that CC$ is the first variable that the program sees, therefore make sure you type line 10 before anything else. The ATARI stores variable names in the order that you type them in so if you add this routine to an existing program it will not work, as CC$ will be added to the end of the variable name table. To overcome this little problem, add the routine then list the entire program to tape or disk using LIST "C" or LIST "D:FILE". Then type NEW and re-enter the file using ENTER "C" or ENTER "D:FILE". The name table should then be correct. This procedure *must* be followed if you use TYPO to check the listing.

HOW DOES IT WORK?

The computer's memory is first lowered by 8 pages. This could be any number but you should never lower memory by less than five pages for a character set. The reason for this restriction is that when a 'clear screen' (CHR$(125)) instruction is encountered, ATARI BASIC tends to wipe out some of the memory above the screen and above RAMTOP which would of course wipe out some of your characters if they started immediately above the screen memory.

The Address of Strings and other variables is stored in a table. Address 134 and 135 (VVTP) points to the start of the variables, each one being allocated 8 bytes in this table. For strings the third and fourth bytes in VVTP gives a reference address for the string. This is not the actual address but an OFFSET number of bytes from the beginning of STARP (locations 140 and 141). These are the two bytes which need to be altered in order to redirect the string to your reserved memory.

In line 29030, 'D' is the address of the first variable in STARP, and 'R' is the address of VVTP. So R+2 and R+3 are the two bytes to change. In line 29040 'Q' finds the necessary OFFSET number of bytes which will direct the string to 4 pages above the screen. 'Q' is then divided into high and low bytes and these are POKEd into VVTP in line 29050.

The final instruction, which is placed at the end of all the new character data, is to POKE the string address into CHBAS – POKE 756,MEMTOP

That's it. I hope that this technique will prove useful to you and speed up those agonising initialisation sequences in your programs. If you have any difficult understanding the program, a read through the COMPUTE! book REVISED MAPPING THE ATARI should help. It's a book that should be at every programmer's side.

```
EI 1 REM ******************************
EO 2 REM *    INSTANT CHARACTER SET    *
CZ 3 REM *        by Les Howarth       *
EB 4 REM * --------------------------- *
IY 5 REM *  PAGE 6 MAGAZINE - ENGLAND  *
EN 6 REM ******************************
NM 7 REM
RM 10 DIM CC$(1024):GOSUB 29000
IM 20 REM REST OF PROG HERE
AB 30 STOP
NL 29000 MTOP=PEEK(106)-4
MG 29020 POKE 106,MTOP-4:GRAPHICS N0
IC 29030 D=PEEK(140)+256*PEEK(141):R=PEEK
     (134)+256*PEEK(135)
KP 29040 Q=MTOP*256-D:R1=INT(Q/256):T=Q-R
     1*256
KP 29050 POKE R+2,T:POKE R+3,R1
GQ 30999 REM FOLLOWING LINES CONTAIN A
             COMPLETE CHARACTER SET
PB 31000 CC$(1,80)="♥♥♥♥♥♥♥♥♥88┴┴♥┴┴♥nnDD♥
     ♥♥♥f▌ff▌f♥♥┴>◆</|┴♥♥f1┴0fF♥↑6↑8of;♥┴┴┴
     ♥♥♥♥♥←┴┴888>♥x┴┴↑↑↑|♥"
ZN 31010 CC$(81,160)="♥f<▌<f♥♥♥┴┴◀┴┴♥♥♥♥♥
     ♥♥┴┴0♥♥♥◀♥♥♥♥♥♥♥♥♥♥┴┴♥┘/▔┴0◆@♥▶ccccc▶♥8
     ┴┴┴>>>♥▶┘┘▶◆◆▶♥◀//▶\\▶♥"
NM 31020 CC$(161,240)="ppppw▶\♥▶◆◆▶┘┘▶♥|1
     ◆▶cc▶♥▶┘┘→┴┴┴♥>66▶ww▶♥▶cc▶\\\♥<<<♥<<<♥
     <<<♥<<┴0/▔┴0┴▔/♥♥◀♥♥◀♥♥♥"
ED 31030 CC$(241,320)="◆0┴▔┴0◆♥▶c┘→↑♥↑♥▶c
     ooo◆▶♥?33▶sss♥◀ff▶gg▶♥▶gg◆cc▶♥◀ffwww▶♥
     ▶◆◆▶pp▶♥▶◆◆▶ppp♥▶c◆ogg▶♥"
WH 31040 CC$(321,400)="sss▶sss♥▶↑↑↑↑↑↑▶♥▀▪
     ▪__n◀♥ff1▶ggg♥000ppp◀♥g▶▶wggg♥gw▶oggg♥
     ▶ccggg▶♥▶cc▶ppp♥▶ccggg▶\"
HX 31050 CC$(401,480)="◀ff▶www♥▶◆▶┘ss▶♥▶↑
     ↑↑↑↑↑♥gggggg▶♥ggggo>↑♥gggo▶▶g♥sss>ggg♥
     ggg▶↑↑↑↑♥▶f1┴7g▶♥←┴┴┴┴┴┴←♥"
JO 31060 CC$(481,560)="@◆0┴▔/┘♥x┴┴┴┴┴┴x♥♥◢
     ↑6c♥♥♥♥♥♥♥♥♥♥▌♥♥6▶▶>↑◢♥┴┴┴→→┴┴┴┴┘┘┘┘┘┘┘
     ┴┴┴xx♥♥♥┴┴┴xx┴┴┴♥♥♥xx┴┴┴┴"
CZ 31070 CC$(561,640)="┘\_↑8p◆@@◆p8↑_\┘├┘
     \▂→?▶▌♥♥♥♥▂▪▪▪♥@◆px◀▶▂▪▪▪♥♥♥♥pppp♥♥♥♥
     ▶▶♥♥♥♥♥♥♥♥♥♥♥♥♥♥▶▶♥♥♥♥♥pppp"
WP 31080 CC$(641,720)="♥↑↑ww◢↑♥♥♥♥→→┴┴┴♥♥
     ♥▶▶♥♥♥┴┴┴┴▶▶┴┴┴♥♥<◀◀◀<♥♥♥♥♥▶▶▶▶@@@@@@@@
     ♥♥♥▶▶┴┴┴┴┴┴┴▶▶♥♥♥pppppppp"
YU 31090 CC$(721,800)="┴┴┴→→♥♥♥x◆x◆◀┴←♥♥┴
     <◀┴┴┴♥♥┴┴┴┴◀<┴♥♥┴0◀0┴♥♥♥┴▔◀▔┴♥♥♥┴<◀◀<┴♥
     ♥♥>|◀v◀♥◆◆◆◀fn◀♥♥♥>20:>♥"
GQ 31100 CC$(801,880)="///◀fv◀♥♥♥◀f◀p◀♥♥←
     ┴>┴↑↑♥♥♥◀fv◀/◀◆◆◆◀fvv♥♥┴♥┴┴↑↑♥♥▔♥▔▪__◀
     ♥006|vw♥♥┴┴┴←←←♥♥♥f▶▶kc♥"
EC 31110 CC$(881,960)="♥♥|fvvv♥♥♥◀fvv◀♥♥♥
     ◀fv◀◆◆♥♥◀fn◀//♥♥>0888♥♥♥> >_◀♥♥┴◀┴↑↑↑↑♥
     ♥♥ffnn◀♥♥♥fnn>↑♥♥♥ck▶>6♥"
PR 31120 CC$(961,1024)="♥♥f>┴>n♥♥♥fff◀_◀♥
     ♥◀↑┴6◀♥♥┴<◀◀┴<♥┴┴┴┴┴┴┴┴┴┴♥◀x|nf/♥◢┴8x8┴◢
     ♥♠┴↑←↑┴♠♥"
MS 31150 POKE 756,MTOP:RETURN
```

UPDATE

SHOGI (ISSUE 25): Author Malcom Allison discovered a few bugs in the original program when converting it to another machine and has sent in the following amendments.

```
PC 130 IF MV$(1,3)="RES" THEN GM$(Z)="RES
   ":? "RESIGNS":GOTO 400
CT 290 IF MV$(5,5)="=" THEN ? "CHECKMATE"
   :GM$(Z,Z+4)=MV$:GOTO 400
ZF 2065 V=0
XO 2090 NEXT L:IF V=0 THEN RETURN
EL 2095 GOSUB 3010:IF V=0 THEN RETURN
RR 14210 ? "RANKLANCES & KNIGHTS  may not
    be dropped on   9th RANK or KNIGHTS o
   n the 8th":GOSUB 15000
EX 14280 ? "To RESIGN enter 'RES'"
```

DESIGNER LABELS (ISSUE 26): Several readers had a problem with printing large labels. Gordon Sinclair tells us that the solution is to simply delete CHR$(20) in lines 1930 and 1950.

GREAT BRITAIN LTD (ISSUE 27): John Foden spotted a couple of minor errors in the listing and suggests the following amendments to the name input routine.

Lines 455 and 490 should be deleted and :GOTO 430 should be added to the end of line 480. In addition A$ should be DIMensioned to 25 in line 160 otherwise line 480 will never execute.

A couple of other amendments are to delete the quotation marks from around CHR$(125) in line 660 and delete the inverse quotation mark in line 2520

COMPUTER GAMMON (ISSUE 27): Peter Guerrier has discovered that if your opponent presses his fire button when it is your move the computer accepts it as your move. Alter line 495 to

495 IF STRIG(PLR) THEN 400

See also Dave Hitchens' article elsewhere.

Contact



HELP WANTED

HORSE RACING: Anyone interested in Flat and National Hunt racing please contact. Would like assistance with programs etc. 130XE and disk at present but considering purchase of an ST soon. Don Burley, 177, Legsby Avenue, Grimsby, South Humberside. Phone 74550

PEN PALS/CONTACT

SAN LEANDRO, CALIFORNIA: ST Pen Pals wanted. ST computer club in the United States seeks world-wide friends to correspond with, exchanging ideas and public domain software. Write: Assistant Editors, S.L.C.C., P.O. Box 1506, San Leandro, California 94577, U.S.A.

ST PEN PALS: Seeking pen pals all over the world concerning the ST computer. I would be very interested in contacting anyone in the Stoke area (to possibly start a User Group). Please write to Christopher Collins, 19, Colin Crescent, Weston Coyney, Stoke-on-Trent, ST3 6NL, England. (S.A.E. appreciated else response cannot be guaranteed).

PEN PALS WANTED: Would like to make pen pals from around the world especially wargamers and role playing enthusiasts. I have a disk drive and 130XE. You can contact me on 091 3781326 or write to Jason McKewon, 21, Frederick St. North, Meadowfield, Durham, DH7 8NB

ST USER: Wishes to make contact with other users to exchange hints and tips. Also for sale, half Meg drive £85. All letters will be answered, write to Martin, 157, Crosby Road, Grimsby, South Humberside, DN33 1LY or phone 0472 74584

NEW ZEALAND: I own an Atari 800XL, 1050 drive, 1020 and 1029 printers, Touch Tablet and 1010 tape deck. I am interested in educational software, hardware modifications and finding further uses for my 1029 printer. Anyone welcome to get in touch. A. Lewis, 57, Weir Terrace, Waiouru, New Zealand

PEN PALS WANTED: Anywhere in the known Universe. I will answer all letters promptly. I have an 800XL, 1050, XC11. I desperately need help with Hitch Hikers Guide. Please write. Kev Munro, 48, Sussex Street, Bishop Auckland, Co Durham, DL14 8JD. Tel. 0388 608125

ATARI ST: Pen pals wanted to swap info, ideas, programs written in 68000 and C (source code). I use Devpak and Megamax packages. Letters from non-programmers also welcome. Write to Mr S. Patterson, 38, Stratton, St., Spennymoor, Co Durham, DL16 7TW

FOR SALE

PAGE 6: Issues 2 to 27 in two binders with 12 program disks relative to issues 16 to 27. £35 inc. p&p. ATARI USER issues 1 to 24 in two binders with 3 program disks for issues 1 – 3. £15 inc p&p. H. Ragsdale. Tel 0764 3657

1064 MEMORY MODULE: Atari 1064 plug in 64k memory module for Atari 600XL £9. I. Finlayson, 60, Roundstone Crescent, East Preston, West Sussex. Tel. 0903 773504

XL SYSTEM: Atari 800XL, 1050 disk drive, 1010 recorder, all in immaculate condition plus masses of software on disk in lockable disk box plus dust covers. £210. Ring 0342 (East Grinstead) 27072

1029 PRINTER: For sale, £65. Plus free software, Atariwriter and Atariwriter Plus. Contact R. Archer 0621 76443 (evenings).

MAGAZINES FOR SALE: Computer & Video Games Vol.1, No's 5, 7, 8, 13, Vol.2, No's 6, 9, Vol.3, No's 6, 7 plus 1984 Jun/Aug/Oct, 1985 Jan to Dec, 1986 Jan to Mar, Aug, Sept, Dec and May 1987. All good to mint condition. Will split. Offers. Jason Peasgood, 21, Cumberland Road, Wigston, Leicester, LE8 2XL, Stamp helps for quickest reply.

XE SYSTEM AND MORE: 130XE with Ultimon, touch tablet, Alphacom 81 printer with interface, OS Users manual, Hardware manual, Assembler Editor, almost all the Compute! books for 8 bit Atari, Computer Animation Primer, 6502 M/L for Beginners, all issues of PAGE 6 and Atari User and several issues of Antic, Analog and Monitor. Lots more. WANTED Epson or compatible printer. P. Fragapane, 18, Parson Street, Bedminster, BS3 5PT. Tel. 0272 663475

XL AND PRINTER: Atari 800XL, data recorder and software. £60 o.n.o. Epson LX 86, 4 months old, with centronics interface and software. £400 o.n.o. Tel. Dave Preston 0772 742650

1050 DISK DRIVE: Including software. Mint condition, still boxed. Was bought as a second drive but has not been used. £80 plus postage. Phone after 6 p.m. and ask for Barry. 061 6524781

3 SYSTEMS FOR SALE: 1) 800XL enhanced with Omnimon, 1050 Happy enhanced disk drive, 1029 printer, books, games, utilities, adventures etc. £300 o.n.o. 2) Atari 130XE, 1050 disk drive, games, utilities, adventures and books, £180 o.n.o. 3) Atari 800XL, 1010 data recorder, books, games. £100 o.n.o. Tel. Colin 0302 780016, after 6 p.m.

YOU can use CONTACT. It is free of charge and open to any notice connected with Atari with the exception of the sale or exchange of commercial software. The Editor reserves the right to reject unsuitable notices. Please study the format of the present notices and draft yours accordingly. Put your notice on a plain sheet of paper headed CONTACT and send to CONTACT, PAGE 6, P.O. BOX 54, STAFFORD, ST16 1DR.

XL SYSTEM: 800XL, 1050 disk drive, 1010 recorder for sale. Excellent condition. Loads of software, dust covers, books, mags and 2 joysticks included. All for only £275 o.n.o. Phone Nick on 0452 714394

MAGAZINES: Full collection ANTIC's April '82 (No. 1) to July '87. ANALOG's Jan/Feb '81 (No.1) to May '87. Offers are invited for full collections, not really interested in splitting. 'Make me an offer'. Also 21 Compute! magazines May '83 to Jan '85 plus some odd ones, any offers? I've bought an Amiga, Any Amiga contacts out there please get in touch. Phone Geoff 851 424 4243

MODEMS: WS2000 for sale £90. WS4000 intelligent modem (works 1200/75 with 850 interface, Uses Hayes commands) £140. Turbopoint/A intelligent Centronics printer interface (Uses serial port) £40. Phone Keith (0245) 269030

WANTED

BOOKS, MAGAZINES ETC.: Wanted for Atari 8 bit computers. Also 1029 printer and 1050 disk drive required. Send details and price required to J.C. McNeill, 15, Dalnottar Drive, Old Kilpatrick, Strathclyde, G60 5DP

WANTED: PAGE 6 issues 1 to 6, 8, 9, 11, 14. Monitor issues 1 to 5 and 7. MAC/65 Assembler with instructions. Penpals all over Britain. All replies to Tony Longworth, 13, Greenfield Road, Little Sutton, South Wirral, Cheshire, L66 1PE. Tel. (051) 339 0405 (before 9 p.m. please!)

DISK DRIVE: Atari 1050 disk drive wanted, in the region of £50. I would be willing to swap it for a Casio Mt 100 keyboard. If interested ring 021 552 1343 after 5 p.m.

DISK DRIVE/ACTION: Wanted, a 1050 disk drive also Action, MAC 65 and/or the Toolkits for either. Please phone Julian with prices on 0492 533725 or write to J. T. Bean, 14, Kings Road, Colwyn bay, Clwyd, L29 7YG

1020 PRINTER PART: Does anyone have a spare 'bobbin' that fits onto the shaft of the x-motor of the 1020 plotter? This is a small, white, piece of plastic with 13 teeth. I have been told that I would normally have to buy the whole motor (£20) to get this part! Chris Simon, 20 Fford Offa, Mynydd Isa, Mold, Clwyd, CH7 6UF

WANTED: 850 interface. Touch Tablet or Koala Pad. ANTIC mags Vol. 3 No's 10 and 11. 1050 drive, faulty or dead O.K. Phone Russ on 04955 51536 or write to R. Flynn, 84, Festival Crescent, New Inn, Pontypool, Gwent, NP4 0NH

CLUBS ETC.

THE SYSTEM: Bulletin Board based in Nottingham (0602 817919) has regrettably now ceased to exist. It was previously hoped that the Board may continue but due to a long journey to University, this is now impossible. Sorry for any inconvenience caused, however, watch this space for more promising news in approx. 5 years time!!

SPENNYMOOR COMPUTER CLUB: Welcomes anybody interested in computers. We meet every Monday night at Spennymoor Leisure Centre in the Alpine Room at 7 p.m. Further info? Phone Sean on 0388 813150

MJDBASE

A powerful and flexible database for your 8-bit Atari

MJDBASE is a fully featured database for your 8 bit Atari. You can use it for keeping details of your record collection, books, addresses, reference articles or for Club records and sports records. In fact, anything you need to keep a record of can be included because you can configure MJDBASE to suit yourself.

TYPING IT IN

MJDBASE is a complex piece of software and the Listings are, naturally, quite long but if you use TYPO 3 as you go, you shouldn't have any problems. There are three listings in all which should be typed and SAVEd in order. You must use the filenames "D:INTRO" for Listing 1, "D:MJDBASE2.MGR" for Listing 2 and "D:MJDBASE2,UTL" for Listing 3. To run the program you type RUN "D:INTRO" which will then run the other modules. You can, if you wish, add an autorun for the INTRO program.

USING MJDBASE

MJDBASE is divided into two modules. The main 'Manager' module allows you to add, delete, search, sort, update, mark, extract or list records whilst the Utilities module is for setting up, re-organising and generally making amendments to the structure of the database. The full instructions for each module follow and it is essential that you read through the appropriate sections as you use the program. You will need to keep the instructions handy as you use MJDBASE so it may be a good idea to photocopy the pages and keep them with your disk. The program is relatively easy to use but it is suggested that you set up a few practice databases and try *all* of the features before you commit your lifetimes work of priceless information to disk!

Michael Jackson provides what many serious Atari owners have longed for

This program is available ready to run on this issue's disk – see page 69 for details

Here are the full instructions for using MJDBASE.

THE MANAGER MODULE

MJDBASE is the main record management module of the MJDBASE system. This module allows you to :

1. Open Database
2. Obtain Record
3. Add Record
4. Sort Records
5. Review Structure
6. Close Database
7. MJDBASE – Utilities
8. Directory of Databases
9. Bulk Output
10. Drive Set Up

This section will take you through each of these functions and show you what they do and how to use them to best effect.

1. OPEN DATABASE

This command allows you to connect to a given database and must be used before any operations can be performed upon a database.

On choosing the command, there will be a prompt for the Database name. If the user has forgotten what databases are available on the disk, then by entering 'L' and pressing RETURN, a list of databases will be given. (This can also be achieved from the main menu option (8)- Directory of Databases.)

Once a database name is supplied (a database of this name must have been previously created by using the 'Create Database' command found in MJDBASE – Utilities module), your MJDBASE Manager will connect with the chosen database and load information about the database in question and will show :

1. How many fields.
2. Field Details.
3. How many current records.
4. Maximum No. allowed.
5. The Key Field.
6. Direction of Key.

(If there are no records in the database you are reminded at this stage that you need to use the option **Add Records**).

This is known as the 'Structure' of the database and the MJDBASE Manager must know all these details in order to manage your data correctly.

Having successfully opened your database, you are returned to the main menu. You will notice that the name of the currently connected or opened database will now appear toward the top of the main menu screen. You are now ready to use the other commands. If you attempt to use other

commands (except 7 & 8) before opening a database, you will be reminded that you must 'Open the Database first'.

2. OBTAIN RECORD

The Command to obtain a record allows you to access any or all of the records in your database. Once you have obtained your record, several other commands will become available to you. These will be explained a little further on.

On choosing this command, you will be prompted to indicate a number indicating one of the following search criteria by which your record or records will be obtained or retrieved:

1. Key Search	**3. Marked Records**
2. Flip	**4. Any Character**

Key Search: This search criteria gives you the fastest retrieval time since it references your index which is held in memory. When you enter this choice, you will be prompted for a value which MJDBASE Manager will use to locate your chosen record or records. If, for example, you entered 'HELLO', it will search those records whose key field contains the characters 'HELLO' as the starting characters. (If your index length is say, 3 characters, MJDBASE Manager will choose those records with 'HEL' as being the first characters in the key field. – Index information will be found in the chapter describing the MJDBASE – Utilities module)

The smaller the search data you supply, the wider the potential range of 'matched records'. **N.B.** Please note that this key search assumes that your search characters start with *the first character of the key field.*

Flip: Should you wish to browse or 'flip' through the records without actually searching for any *particular* one, this command will obtain all the records for you in the logical sequence dictated by the sorted order of your index (i.e either in ascending alphabetic or descending alphabetic order)

Marked Records: This search option will only access those records that have been 'marked' (for details about 'marked' records please read about the 'Mark Record' sub-command further on.)

Any Character: This is a flexible search option since it allows you to search your whole database for a string of characters. Since this option scans the whole database without the key, this takes a little while depending on the size of your database. Please be patient!

Having displayed your record on the screen you will notice that the key field will be indicated by an ' > ' to the left of the field name.

You will also see an information bar across the top of the screen. From left to right you will see 'K'; 'Rec No' and 'Search'. Next to 'K' you will see either 'a' or 'd' showing that the key is in Ascending or Descending order and beside that you will see for how many characters. The 'Rec No' sign indicates the *logical number* of the record in key order. The 'Search' indicator shows the criteria by which you are currently obtaining records.

As mentioned earlier, once a record has been obtained and displayed on your screen, you have several sub-commands available that mainly relate to the currently displayed record:

a) Next record	**f) Reshow Record**
b) Back to the last record	**g) Stop obtaining**
c) Erase record	**h) Mark record**
d) Update record	**i) Clear mark**
e) Print obtained record	

Let's look at each of these sub-commands:

Next record: You will see from the highlighted sub-command bar that to obtain the next record, you merely press *RETURN*. This will obtain the next record that conforms to the currently sorted alphabetic order and/or search criteria.

Back to last record: By entering 'B', MJDBASE Manager will re-obtain the last record that was displayed. This is particularly useful if you wish to redisplay a previous record without having to go through the main menu again.(This option is currently only available with the 'Flip' search criteria.)

Erase record: This command will remove the currently obtained record from your database. (See how to revive these records in the chapter dealing with MJDBASE Utilities). By using this command, two things happen:-

1. All reference to the record will be removed from the index that is held in memory.
2. The record on your database will be 'flagged' as having been deleted. (The physical record will still remain on your database but will not be recognised by MJDBASE Manager)

As you use your database, you will find that the database data file will become increasingly populated with 'deleted' records. (This will be indicated by having a large data file when you are only dealing with relatively few records). From time to time, it will be necessary to 'weed' them out totally. The 'Compact Database' command will do this for you. This is found on the menu to the MJDBASE Utilities module. For further details see 'Compact Database' in the chapter dealing with the utilities. **WARNING:** The 'compact database' utility *physically* removes the flagged records. Make sure that you have 'revived' all the records (this option is found in the Utilities module) you want before you use this command. There is no return after this!

Update record: By entering 'U', MJDBASE Manager will ask you which field of the obtained record you wish to update. Enter the number which relates to the field you wish to update. (When a record is displayed on the screen, each field will have a number beside it on the left. This is the number you enter)

On entering the the number, the appropriate field will be displayed together with it's current contents. The cursor will be automatically positioned at the beginning for your convenience. Make your amendment to the field as you wish then press RETURN. (Remember not to amend the field to a size larger than is allowed for it.)

The record will be re-displayed showing you the latest change. You will be prompted for another field number to update. When you have finished updating a record, enter 0 to the prompt. The database file and index will be amended accordingly and the next record will be automatically obtained for you. (You will not be allowed to update a field with more characters than the field was originally meant to hold. – This is defined when you create your database. See the chapter on Utilities for more information.)

Print Obtained Record: This sub-command ('P') will allow you to obtain a 'hard copy' of the record you have currently obtained on the screen. *Be sure that your printer is turned on and 'on line' to your computer.*

Reshow Record: This command allows you to redisplay a record which has too many fields to show on the screen at one time. This saves you from having to advance to the next record

then use the 'B' command to get back.
Stop obtaining: Entering 'S' will stop further searching on the database and return you to the main menu.
Mark Record: There may well be times when you want to remember a particular record or records for your own special reasons, perhaps as reminders of some sort.

MJDBASE will allow you to flag or 'Mark' any record with this command. As a result, every time a marked record is obtained you will be reminded by a beep sound. Marked records can also be searched for under the 'Obtain Record' command called from the main menu.
Clear Mark: This command will remove the 'mark' from the record.

3. ADD RECORD

This command allows you to expand your database with more records. When you enter the command, you will be prompted for data for each field within the record. When you are entering a key field you will be notified of this by a '>' to the left of the field name.

After all the fields for each record have been entered, you will be prompted to indicate whether further records are to be added. If so, then merely press RETURN, if not then press 'E' to end. As you enter the records they will be automatically sorted in accordance with the existing index.

4. SORT RECORDS

This command allows you to sort the active (in memory) index in the opposite alphabetic order that is currently in force. This means that if you want to change the direction by which you obtain records then you don't have to re-create the index!

On entering this command, you will be reminded what the current index direction is and prompted to enter 'A' for Ascending or 'D' for Descending. On entering 'A' or 'D' your index will be sorted instantaneously and you will be returned to the main menu. You will now be able to obtain your records in accordance with the new key direction.

5. REVIEW STRUCTURE

This option allows you to review the status of the currently opened database at any given time. As mentioned before, this is automatically given to you when a database is initially opened. It is useful, though, to be able to remind oneself what the current index is and the field lengths.

6. CLOSE DATABASE

This is the command to signal to MJDBASE Manager that you have now finished with the database. *It is important to use this command if you have made a change to the database since you opened it.* If this is neglected, then you will lose the current index and possibly lose track of all the recently added records.

In order to remind you when it is important to close the database when you have finished with it, the option on the main menu will be highlighted.
N.B. If by accident, you do forget to close the database or there is a power failure before you can close it, then all is not lost! Please see the section of DATABASE RECOVERY later on.

7. MJDBASE – UTILITIES

This option allows access to the second of the MJDBASE modules. The utilities. Details about this module will be found later in the article.

8. DIRECTORY OF DATABASES

This command allows you to see what databases are on a disk.

9. BULK OUTPUT

Up to now, your MJDBASE Manager has allowed you to view and print your records on an individual basis as you have obtained them. This useful command allows you to output your selected records in different formats either to screen, printer or disk on an automatic basis (without having to press RETURN for next record etc.)

On entering this command, you will be prompted for the search criteria as usual (See Obtain record). Here you will be saying to MJDBASE Manager that all the records that you want output via the Bulk Output routine will conform to this search key data.

Once you have entered this, you will be asked whether the Bulk Output is to be directed to the screen,printer or in extract mode. By entering 'S' or 'P' output will be listed to the screen or printer respectively. The data output will comprise of your selected fields side by side under the headings. For example:

NAME	ADDRESS
Fred Bloggs	10, Downing Street
Ivy Tilsley	7, Newhaven Road
Jack Waddle	"The Oaks", Country Lane

The 'Extract' mode is a more flexible mode and is primarily designed to allow 2 styles of output:

1. Data output will consist of field data only (no headings) and each selected field will output one after the other rather than being output side by side or on one line as just described previously(see above example). This means that simple labelling output can be achieved.
2. Data can optionally be output in Database format thus giving you the ability to create new database data files. If you choose to only output some fields, you can effectively 'delete' a field when creating your new database file.

If 'Extract' mode is chosen, you will be prompted with 'Enter Device'. Please enter 'S:'(for screen output),'P:'(for printer output) or 'Dn:xxxxxxxx.xxx'(for disk output).

Using 'extract' for Database creation

If you opt for disk output with the aim of creating a new database, please do the following:

1. Make sure that the output filename you supply has an extender of '.DAT' since this signifies a data file to MJDBASE
2. Answer 'Y' to the question about database format.
3. After the data has been output to the disk file. You must use the 'Create Database' command in the Utilities module to create the structure which will reflect the fields which are in your newly created database file. Make sure you call the database the same name as the database data file you have just created (excluding the extender).
4. Use the 'Create Index' in the Utilities module to register your new database file into an index.

Finally, you are able to direct MJDBASE *which fields* you want included in the output. Not all of the fields need be output. The number relating to a field that is to be output should be entered. This must be repeated for as many fields

as are required. These numbers are found to the left of the field names.

In addition to the actual field numbers, there are 3 extra values which can be used:

a) 0 This means you have finished your selection of fields for output.

b) -1 This means you want *all* the fields in the record output. (This is easier than entering all the field numbers one at a time!)

c) 99 This clears all the fields you have selected in case you change your mind and want to start again.

When you enter 0, MJDBASE will do the work!

10. DRIVE SET UP

This command allows you to use more than one drive and so eliminate disk swapping. The MJDBASE software will always expect to find its component modules in Drive 1. Therefore, the Master disk holding the MJDBASE modules *must* always be inserted in Drive 1 when prompted.

11. DATABASE RECOVERY

Should your computer system crash or be switched off before you properly close the database, you will lose your active index to that database.

When this happens, it means that you may not have an up-to-date index by which you can keep track of your records. You are able to recreate your index by using the 'Create Index' command found on your MJDBASE Utilities module. For more details on this, see the documentation dealing with the Utilities module.

MJDBASE – UTILITIES

MJDBASE Utilities is a database tool module and is part of the overall management of your database. This module allows you to :

1. Create Index	**6. Delete/clear database**
2. Compact Database	**7. Drive set up**
3. Create Database	**8. Restructure database**
4. MJDBASE Manager	**9. Revive records**
5. Directory of databases	

This section will take you through each of these functions and show you what they do and how to use them.

1. CREATE INDEX

This utility causes MJDBASE Manager to arrange and sort your records on any field.

MJDBASE Manager will only be able to look, retrieve and organise records that appear in an index. If, for example, your current index is based on the key field 'NAME' and the index is in 'Ascending' order, then all records will be presented to you so that the field NAME will be in alphabetic order.

An index also allows MJDBASE to locate your chosen record much faster by simply searching the index rather than the complete data file.

On entering this command, you will be reminded of the structure of the database in question and prompted for the field number which you want as the key field. Once you enter the number, you must then enter the number of characters of the key field that you want to be included in the index. The larger the number of characters, the more precise the search and sorting operations will be but also you will be able to manage less records. You will be given a guide as to the maximum number of records you can safely expect to enter with any given index size. This will be notified to you on the 'Review Structure' and 'Open Database' commands on MJDBASE MANAGER module as well as with this command.

Once you have entered the field number you want as the key field, you will be asked whether you want the index sorted in Ascending alphabetic (A – Z) order or descending (Z – A). Enter A or D as appropriate.

The Create Index utility will now create your new index for you.

2. RECOVERY WITH CREATE INDEX

This command does not look for an existing index and therefore can be used to create an index which has been lost or corrupted by accident.

3. COMPACT DATABASE

After a while, you may find that your data file is extremely large considering it's holding relatively few records!

This is because when you delete records, they are not physically removed from the data file but merely flagged as having been deleted. It is done this way for the sake of speed and convenience when using your database. As a result, you should strip away the deleted records occasionally until your data file only holds 'live' records thus giving you more space on your disk.

This utility does just this job. It strips away and thereby compacts your database file. Not only does it do this but it automatically re-indexes the new compacted file in accordance with the existing index.

Once you enter this command, you will be prompted to enter the name of the database which you want compacted. Once you have done this, it will display the structure for your information. Follow the prompts and your database will be compacted.

4. CREATE DATABASE

This is the command to use when you want to set up a database right from the beginning.

You will be prompted for a name that you want to know the database by. Enter any name. (Not longer than 8 characters) Next you will be asked how many fields your records will have. Please indicate this.

Now you will be prompted for details about each field a) the name and b) its length. The name of the field must not exceed 12 characters. You will next be reminded of all the fields that you have defined (and their lengths) and asked to designate one of the fields to be the *key field* by entering the appropriate number. You must next define the number of characters of the chosen key field to which the key will apply.

The utility will now create your database. If you later wish to change the index length of the key field, you can use the 'Re-Index' utility.)

Your database is now ready to have records added to it via MJDBASE Manager module.

5. MJDBASE MANAGER

This command accesses the main record management module, MJDBASE Manager.

6. DIRECTORY OF DATABASES

This command allows you to see all the databases on your disk.

7. CLEAR/DELETE DATABASES

This command is one to use with care! Clearing a database is not the same as deleting it.

When you clear a database, you merely remove all the records from it and the database will be almost as if you just created it except that it will still retain the current index structure.

Deleting a database physically removes all trace of a database from your disk!

You will be warned just before the deed is done in case you want to change your mind! Just follow the prompts but be careful!

8. DRIVE SET UP

This command allows you to use more than one drive and so eliminate disk swapping.

The MJDBASE software will always expect to find its component modules in Drive 1. Therefore, the Master disk holding the MJDBASE modules *must* always be inserted in Drive 1 when prompted.

9. RE-STRUCTURE DATABASE

This command allows you to alter the size of existing fields within your database.

Even if the database has hundreds of records already in it, this command will allow you to shorten and lengthen fields to accommodate your new requirements.

On entering this command, you will be prompted for the database name which you want to restructure. On entering the name, the Utilities module will load the current description or structure for your information and then display the fields for amendment.

You will be asked to enter the number of the field you wish to alter and then be prompted for its new size. The fields will be redisplayed reflecting the new size for your chosen field. This operation can be repeated until you have decided upon the new field sizes that you want. When you have finished, you must enter 0 to indicate this.

The MJDBASE Utilities will recreate your database records with the new sizes incorporated. If the new size is smaller than the original, your data will be truncated so *beware!*. If your new size is longer than the original, then your field will be padded out with spaces.

10. REVIVE RECORDS

This command is probably the most precious one you will want if you erase records by accident. *Those records erased SINCE the last compaction* can be resurrected with this command.

On entering this command, MJDBASE will prompt for the database name. Once you have entered this, MJDBASE Utilities will scan your database for erased records and present them on the screen individually for you option to revive or not.

If you choose not to revive any displayed record, you will still have the chance to revive it until you COMPACT the database. Then all 'erased' records really will be beyond reach!

```
EI 1 REM ********************************
JE 2 REM *           MJDBASE            *
WB 3 REM *      by Michael Jackson      *
EB 4 REM * ---------------------------- *
EH 5 REM *      LISTING 1 - LOADER      *
ED 6 REM * ---------------------------- *
JA 7 REM *  PAGE 6 MAGAZINE - ENGLAND   *
EP 8 REM ********************************
NO 9 REM
NY 10 GRAPHICS 0:POKE 710,0:POKE 752,1:PO
   SITION 15,10:? "MJDBASE"
DV 98 FOR I=0 TO 125:READ A:POKE 1664+I,A
   :NEXT I
YH 100 DATA 104,104,133,217,104,133,216,1
   04,133,209,104,133,208,169,0
PI 110 DATA 133,218,133,207,162,1,165,216
   ,133,214,165,217,133,215,24
VC 120 DATA 165,214,133,212,101,205,133,2
   14,165,215,133,213,105,0,133
YQ 130 DATA 215,164,203,165,206,240,10,17
   7,214,209,212,144,44,240,12
XO 140 DATA 176,19,177,214,209,212,144,13
   ,240,2,176,30,200,196,204
OT 150 DATA 240,227,176,23,144,223,169,1,
   133,218,164,205,136,177,214
DW 160 DATA 72,177,212,145,214,104,145,21
   2,192,0,208,241,232,224,0
RW 170 DATA 208,2,230,207,228,208,208,172
   ,165,209,197,207,208,166,165
LG 180 DATA 218,201,0,208,144,96
IE 185 DR=1:POKE 769,2:POKE 770,83:X=USR(
   ADR("hLS▯*")):IF PEEK(771)=1 THEN DR=2
XN 200 POKE 1536,DR:RUN "D1:MJDBASE2.MGR"
```

```
EI 1 REM ********************************
JE 2 REM *           MJDBASE            *
WB 3 REM *      by Michael Jackson      *
EB 4 REM * ---------------------------- *
JJ 5 REM * LISTING 2 - MANAGER MODULE   *
ED 6 REM * ---------------------------- *
JA 7 REM *  PAGE 6 MAGAZINE - ENGLAND   *
EP 8 REM ********************************
NO 9 REM
SM 100 DIM W$(16),DY$(15):DY$="D1:*.STR":
   GOTO 19450
LR 250 REM OBTAIN RECORD
HR 400 IF OPE<>1 THEN GOSUB 31150:RETURN
HQ 550 TRAP 40000:REC=0:GOSUB 19150
TE 700 GOSUB 5200
TY 850 GOSUB 1150
ZZ 1000 RETURN
FT 1010 REM SEARCH FOR ANY CHARACTER
VB 1015 W=LEN(WK$):WW=W-1
FE 1020 FOR I=1 TO RECSIZE-W
SD 1030 IF WK$=REC$(I,I+WW) THEN ACF=1:GO
   TO 1060
FB 1040 NEXT I
PK 1050 ACF=0
AR 1060 RETURN
FN 1150 REM GET RECORD FROM DATA FILE
NE 1300 TRAP 40000:CLOSE #4:OPEN #4,12,0,
   FILEDB$
VF 1600 IDC=ID+1
TN 1750 POINT #4,SEC,CHAR
AV 1760 REC$="":FOR I=1 TO NE
YA 1770 INPUT #4;W$
ZI 1780 REC$(LEN(REC$)+1)=W$
GE 1790 NEXT I
ZA 1795 INPUT #4;W$
LW 1800 IF SC=3 AND W$<>"M" THEN GOTO 430
   0
PC 1810 IF SC=4 THEN ACF=0:GOSUB 1010:IF
   ACF=0 THEN 4300
PJ 2050 ? CHR$(125):POKE 710,112:POKE 712
   ,112:POKE 752,1:DC=0
DN 2055 IF KD=1 THEN ? "K=D";:GOTO 2060
VK 2057 ? "K=A";:IF SC=2 THEN WK$="FLIP"
TY 2058 IF SC=3 THEN WK$="MARKED"
CA 2060 ? "(";KN;") REC NO. ";ID;"  SEARC
   H =";WK$:? "──────────────────────────
   ──────────"
KJ 2200 FOR I=1 TO NE
GB 2350 ? I;") ";:IF I=KF THEN ? CHR$(30)
   ;">";
```

```
MW 2500 ? HEADING$(HS(I),HE(I));":";REC$(
ES(I),EE(I))
XA 2510 DC=DC+1:IF DC=21 THEN ? :? "**PRE
SS ANY KEY FOR MORE ";:INPUT Q$:DC=0
FR 2650 NEXT I
IM 2800 FOUND=1
XK 2810 IF W$="M" THEN SOUND 0,10,10,10:F
OR I=1 TO 70:NEXT I:SOUND 0,0,0,0:? :?
 "**A marked record**"
AI 2950 ? :? " R=Reshow  E=Erase  U=Updat
e  S=Stop "
SO 3100 ? " B=Back  P=Print  RETURN=Next
Record "
HC 3110 ? "       M=Mark Record  C=Clear Ma
rk     "
OD 3250 POKE 694,0:POKE 702,64:INPUT Q$:I
F Q$="" THEN 4300
LC 3260 IF Q$="R" THEN GOTO 2050
RI 3400 IF Q$="E" THEN GOSUB 25750:IDC=ID
C-1:CHANGE=1
ZS 3550 IF Q$="U" THEN GOSUB 22300:CHANGE
=1
UO 3700 IF Q$="S" THEN GOTO 4750
IW 3850 IF Q$="B" THEN IDC=IDC-2
UJ 4000 IF Q$="P" THEN GOSUB 21550
FB 4010 IF Q$="M" OR Q$="C" THEN GOSUB 24
400
CS 4300 GOSUB 6250
QI 4450 GOTO 1600
OL 4600 CLOSE #4
QB 4750 ? :? "Press any key to return":PO
KE 764,255
CP 4900 IF PEEK(764)=255 THEN 4900
BW 5050 POKE 764,255:RETURN
SE 5060 REM BULK OUTPUT
WH 5065 IF OPE<>1 THEN GOSUB 31150:RETURN
AE 5070 GOSUB 5200
XT 5072 FOR I=1 TO NE:CF(I)=0:NEXT I
ZL 5075 TRAP 40000:TRAP 5199
LL 5080 ? "Output to Screen  Printer  Ext
ract ";:INPUT Q$
LE 5085 IF Q$="S" THEN OPEN #2,8,0,"E:":P
OKE 710,96:POKE 712,96:GOTO 5110
YJ 5087 IF Q$="P" THEN OPEN #2,8,0,"P:":P
OKE 710,96:POKE 712,96:GOTO 5110
DE 5090 IF Q$="E" THEN ? :? "Enter comple
te filespec name (Dx:....)":INPUT W$:O
PEN #2,8,0,W$
CE 5095 DBF=0:IF Q$="E" THEN ? :? "Extrac
t file to be in a Database format ";:I
NPUT W$:IF W$="Y" THEN DBF=1
AJ 5100 IF Q$<>"S" AND Q$<>"P" AND Q$<>"E
" THEN 5080
HQ 5110 ? CHR$(125);"BULK OUTPUT":? :? :F
OR I=1 TO NE:? I;")";HEADING$(HS(I),HE
(I));:IF CF(I)=1 THEN ? "**SELECTED**"
;
CZ 5115 ? :NEXT I:? "Enter field number t
o output...."
WG 5117 TRAP 40000:TRAP 5110:? :? "0 Fini
sh":? "-1 All fields":? "99 Clear":? :
? "Choice ";:INPUT W
GY 5120 IF W=0 THEN 5132
NO 5122 IF W=99 THEN FOR I=1 TO NE:CF(I)=
0:NEXT I:GOTO 5130
KX 5124 IF W=-1 THEN FOR I=1 TO NE:CF(I)=
1:NEXT I:GOTO 5132
KV 5125 CF(W)=1
PU 5130 GOTO 5110
LZ 5132 REM GET RECORD FOR BULK OUTPUT
MV 5133 ? CHR$(125);"BULK OUTPUT LISTING"
:IF Q$="P" THEN POSITION 10,10:? "Prin
ting...."
EO 5135 TRAP 40000:TRAP 24550:CLOSE #4:GO
SUB 19150:OPEN #4,12,0,FILEDB$:REC=0:O
REC$=""
LR 5136 FOR I=1 TO NE
HH 5137 IF CF(I)=1 THEN W$=HEADING$(HS(I)
,HE(I)):W$(LEN(W$)+1)=B$:W$=W$(1,ELSIZ
E(I)+1):OREC$(LEN(OREC$)+1)=W$
GK 5138 NEXT I
HQ 5139 IF Q$<>"E" THEN ? #2;OREC$:? #2
VL 5140 IDC=ID+1
TH 5145 POINT #4,SEC,CHAR
BJ 5147 REC$="":FOR I=1 TO NE
CD 5150 INPUT #4;W$:REC$(LEN(REC$)+1)=W$
LB 5151 NEXT I:INPUT #4;W$
GK 5152 REM OUTPUT BULK RECORD
YF 5153 IF SC=3 AND W$<>"M" THEN GOTO 519
0
EP 5154 IF SC=4 THEN ACF=0:GOSUB 1010:IF
ACF=0 THEN GOTO 5190
BI 5155 OREC$=""
LC 5160 FOR I=1 TO NE
KP 5163 IF Q$="E" AND CF(I)=1 THEN ? #2;R
EC$(ES(I),EE(I)):GOTO 5167
YI 5165 IF CF(I)=1 THEN OREC$(LEN(OREC$)+
1)=REC$(ES(I),EE(I)):OREC$(LEN(OREC$)+
1)=" "
GP 5167 NEXT I
EI 5168 IF Q$="E" AND DBF=1 THEN ? #2;" "
JB 5170 IF Q$="E" THEN 5190
CJ 5180 ? #2;OREC$
DQ 5190 GOSUB 6250
ST 5195 GOTO 5140
SX 5199 ? "Press any key to return";:INPU
T Q$:RETURN
KU 5200 REM GET KEY FOR SEARCH
JN 5350 ? CHR$(125);"Search Criteria"
RA 5355 NK=0:FOUND=0
EF 5360 ? :? "1. Key Search"
YK 5370 ? "2. Flip"
WO 5380 ? "3. Marked Records"
WY 5390 ? "4. Any character"
HK 5400 TRAP 40000:TRAP 5400:? :? :? "Cho
ice ";:INPUT SC
EZ 5410 IF SC=1 THEN 5500
CM 5420 IF SC=2 THEN NK=1:GOTO 6100
DB 5430 IF SC=3 THEN NK=1:GOTO 6100
ES 5435 IF SC=4 THEN NK=1:? :? :? "Enter
search string ";:INPUT WK$:GOTO 6100
TB 5440 GOTO 5350
TE 5500 ? :? "Enter search value for ";HE
ADING$(HS(KF),HE(KF))
PX 5650 ? :? ">";:POKE 694,0:POKE 702,64:
INPUT WK$:FOUND=0
BB 5800 IF WK$="*" THEN NK=1
LD 5950 IF LEN(WK$)>KN THEN WK$=WK$(1,KN)
UO 6100 IDC=1
VS 6250 FOR ID=IDC TO RECS
II 6400 SS=((ID*(KN+6))-(KN+6-1)):SE=SS+K
N-1:TE=SE
CQ 6550 IF LEN(WK$)<KN THEN TE=SS+LEN(WK$
)-1
LF 6700 IF NK=1 THEN 7450
KS 6850 TRAP 40000:TRAP 7300:IF WK$=SORT$
(SS,TE) THEN 7450
GZ 7000 IF FOUND=1 THEN 7300
KW 7150 NEXT ID
NS 7300 ? :? :? "No more matches found.":
POP :? :? "Press RETURN to continue":I
NPUT Q$:GOTO 19600
IC 7450 TRAP 40000:TRAP 7300:PN$=SORT$(SE
+1,SE+6)
ZU 7600 SEC=VAL(PN$(1,3)):CHAR=VAL(PN$(4)
)
BI 7750 RETURN
QB 7900 REM ENTERING DATA
VN 8050 IF OPE<>1 THEN GOSUB 31150:RETURN
LX 8200 CLOSE #4:TRAP 40000:GOSUB 19150:T
RAP 8350:GOTO 8500
GR 8350 IF PEEK(195)=170 THEN CLOSE #4:OP
EN #4,8,0,FILEDB$:CLOSE #4
MW 8500 TRAP 40000:TRAP 24550:CLOSE #4:OP
EN #4,9,0,FILEDB$
EZ 8650 POKE 710,32:POKE 712,32:? CHR$(12
5);"Enter Records":?
NL 8800 ? "Enter data and press RETURN":R
EC$="":? "────────────────────────────
────────"
LS 8950 FOR I=1 TO NE
OD 8960 IF I=KF THEN ? ">";
PC 9100 ? HEADING$(HS(I),HE(I));" (";ELSI
ZE(I);")":?
DX 9250 INPUT W$:IF LEN(W$)>ELSIZE(I) THE
N ? "ERROR IN SIZE":GOTO 9100
NU 9400 W$(LEN(W$)+1)=B$:REC$(LEN(REC$)+1
)=W$(1,ELSIZE(I)):?
FH 9550 NEXT I
NT 9700 NOTE #4,SEC,CHAR:NPK$="      "
HC 9850 SORT$(LEN(SORT$)+1)=REC$(ES(KF),E
S(KF)+KN-1)
DB 10000 NPK$=STR$(SEC):NPK$(LEN(NPK$)+1)
=B$:NPK$(4)=STR$(CHAR):IF LEN(NPK$)<6
THEN NPK$(LEN(NPK$)+1)=B$
DD 10150 SORT$(LEN(SORT$)+1)=NPK$
CL 10300 RECS=RECS+1:GOSUB 29200
AR 10310 FOR I=1 TO NE
XW 10450 W$=REC$(ES(I),EE(I))
WO 10460 ? #4;W$
GX 10470 NEXT I
OS 10480 ? #4;" "
JU 10600 ? :? "(E to end- RETURN to conti
nue)";:INPUT W$:IF W$="E" THEN CLOSE #
4:RETURN
CF 10750 GOTO 8650
LB 10900 REM SELECT DATABASE
NA 11050 IF CHANGE=1 THEN ? :? "Please c
lose database ";NAME$;" first.":GOSUB
31300:RETURN
HW 11100 IF PEEK(1536)=1 THEN ? "K":? :?
:? "Ensure Data disk is in Drive 1..."
:? :? "Press RETURN...";:INPUT W$
UZ 11200 REM INITIALISE VARIABLES
MU 11350 CLR :DIM FILEDB$(15),NAME$(8),ST
$(4),DAT$(4),DY$(15),W$(255),B$(255):B
$(1)=" ":B$(255)=" ":B$(2)=B$:NAME$=""
WV 11500 DIM IDX$(4):IDX$=".IDX":FILEDB$=
"D1:":DAT$=".DAT":ST$=".STR":FILEDB$(2
,2)=STR$(PEEK(1536)):DY$="D1:*.STR"
ZO 11510 DY$(2,2)=FILEDB$(2,2)
XC 11650 ? CHR$(125);"Database Selection"
:? :? "Enter Database (L for list)":?
:? "Name ";
NJ 11700 INPUT NAME$:FILEDB$(4)=NAME$:TRA
P 40000
OO 11800 IF NAME$="L" THEN GOSUB 29650:GO
TO 11650
ZD 11850 IF NAME$="" THEN GOTO 11650
QJ 11950 GOSUB 19000
ZL 12100 TRAP 40000:TRAP 24550:CLOSE #4:O
PEN #4,4,0,FILEDB$
AQ 12250 GET #4,NE
RE 12400 DIM ELSIZE(NE),CF(NE):FOR I=0 TO
 NE:ELSIZE(I)=0:CF(I)=0:NEXT I:RECSIZE
=0
BR 12550 FOR I=1 TO NE
KU 12700 GET #4,W:ELSIZE(I)=W
KK 12850 RECSIZE=RECSIZE+ELSIZE(I)
FP 13000 NEXT I
TL 13150 DIM REC$(RECSIZE),HEADING$(12*NE
),ES(NE),EE(NE),HS(NE),HE(NE):EE(0)=0:
DIM PN$(6),Q$(1),OREC$(RECSIZE+NE)
GJ 13300 MEM=FRE(0)-200:DIM NPK$(6),SORT$
(FRE(0)-200):NPK$="      "
AX 13310 FOR I=1 TO NE
EG 13450 INPUT #4;W$:HEADING$(LEN(HEADING
$)+1)=W$(1,12)
GZ 13460 NEXT I
BC 13600 FOR I=1 TO NE
GC 13750 ES(I)=EE(I-1)+1
RO 13900 EE(I)=ES(I)+ELSIZE(I)-1
JE 14050 HS(I)=(12*I-11):HE(I)=I*12
FX 14200 NEXT I
SS 14350 CLOSE #4
RC 14500 GOSUB 19300
AY 14650 TRAP 40000:TRAP 24550:CLOSE #4:O
PEN #4,4,0,FILEDB$
QU 14800 TRAP 40000:TRAP 15700
IS 14950 INPUT #4;W$:RECS=VAL(W$):GET #4,
KN:GET #4,KF:GET #4,KD
TH 14960 DIM WK$(ELSIZE(KF))
SA 15100 FOR I=1 TO RECS
JM 15250 INPUT #4;W$
VH 15400 SORT$(LEN(SORT$)+1)=W$
HC 15550 NEXT I
UH 15700 OPE=1
SP 15850 GOSUB 16150
FG 16000 GOTO 19450
KD 16150 REM DISPLAY DATABASE STRUCTURE
KL 16300 IF OPE<>1 THEN GOSUB 31150:RETUR
N
FV 16450 ? CHR$(125);"Structure of ";NAME
$:? "──────────────────────────────────
────"
MK 16600 ? "No.    Field Name           Fiel
d Size"
CY 16750 DC=0:FOR I=1 TO NE
```

→

```
RA 16900 ? I;"      ";HEADING$(HS(I),HE(I));"          ";ELSIZE(I)
IN 16910 DC=DC+1:IF DC=21 THEN ? :? "**PRESS RETURN FOR MORE ";:INPUT Q$:DC=0
GR 17050 NEXT I
WX 17200 ? :? "KEY IS ";HEADING$(HS(KF),HE(KF));"  (";KN;" CHARS)"
RY 17350 IF KD=1 THEN ? "in Descending order":GOTO 17650
GO 17500 ? "in Ascending order"
WJ 17650 ? :? "RECORDS IN DATABASE = ";RECS
MJ 17800 ? "MAXIMUM RECORDS ALLOWED=";INT(MEM/(6+KN))
XI 17810 IF RECS=0 THEN ? :? "Please use option 3 to Add Records"
MS 17950 ? "Press any key to return":POKE 764,255
YG 18100 IF PEEK(764)=255 THEN 18100
SN 18250 POKE 764,255
DZ 18400 RETURN
CS 18550 REM LOAD SORT/RESTRUCTURE PROGRAM "D:DBASE.SRT"
ON 18700 IF CHANGE=1 THEN ? :? CHR$(253);"Please close database ";NAME$;" first.":GOSUB 31300:RETURN
BH 18850 IF PEEK(1536)=1 THEN ? CHR$(125):? :? "Ensure that Master Disk is in Drive 1":? :? "Press RETURN ";:INPUT W$
XN 18860 TRAP 40000:TRAP 18870:? :? :? "Loading Utilities":RUN "D:MJDBASE2.UTL"
BA 18870 ? :? CHR$(253);"UNABLE TO FIND UTILITIES":FOR I=1 TO 100:NEXT I:GOTO 18850
TQ 19000 FILEDB$(LEN(FILEDB$)+1)=ST$:RETURN
IE 19150 FILEDB$(LEN(FILEDB$)-3)=DAT$:RETURN
WJ 19300-FILEDB$(LEN(FILEDB$)-3)=IDX$:RETURN
UR 19450 REM MENU
ME 19600 CLOSE #4:CLOSE #2:POKE 82,0:GRAPHICS 0:POKE 710,128:POKE 712,128:? " MJDBASE MANAGER - By Michael Jackson"
GX 19610 ? "────────────────────────────────────":? " Version 3.0 07/11/86";"     ";PEEK(1536);" Drive(s)"
MM 19620 ? "────────────────────────────────────"
FS 19750 IF OPE=1 THEN ? " Opened Database=";NAME$;"   Recs=";RECS
JK 19780 IF OPE=1 THEN ? "────────────────────────────────────":?
PO 19900 ? :? "1) Open Database    2) Obtain record":? :? "3) Add records";
EB 20050 ? "      4) Sort records":? :? "5) Show Structure";
OM 20200 IF CHANGE=1 THEN ? "  6) Close Database":GOTO 20500
FP 20350 ? "  6) Close Database"
AP 20500 ? :? "7) Utilities          8) DB Directory":? :? "9) Bulk Output      10) Drive Set up"
IV 20650 TRAP 40000:TRAP 20950:POKE 195,0:? :? :? "Choice:";:INPUT CHOICE
XZ 20800 ON CHOICE GOSUB 10900,250,7900,28450,16150,26500,18550,29650,5060,31500
EV 20950 GOTO 19600
CA 21550 REM PRINT DISPLAYED RECORD
NV 21700 TRAP 40000:TRAP 22150
IH 21850 FOR I=1 TO NE:LPRINT HEADING$(HS(I),HE(I));":";REC$(ES(I),EE(I)):NEXT I
DC 22000 RETURN
TA 22150 ? CHR$(253);"Check printer is O.K. then press RETURN":? "or Q to quit.";
KG 22160 INPUT Q$:IF Q$="Q" THEN IDC=IDC-1:GOTO 22000
DE 22170 GOTO 21550
RT 22300 REM UPDATE RECORD
LN 22310 TRAP 40000:TRAP 22310
HW 22450 ? :? "Which field to update (1-";NE;")":? "Enter 0 to end";:INPUT CH:IF CH=0 THEN 24400
ZD 22600 GRAPHICS 0:POKE 710,192:POKE 712,192:? HEADING$(HS(CH),HE(CH));" (";ELSIZE(CH);" Chars Max.)"
WE 22750 ? "────────────────────────────────────"
EU 22900 POSITION 1,3:? REC$(ES(CH),EE(CH))
YM 23050 POSITION 0,3:INPUT W$:IF LEN(W$)>ELSIZE(CH) THEN ? "Too large. Try again. Press Return";:INPUT W$:GOTO 22600
JD 23060 IF W$(1,1)="?" THEN W$=W$(2)
TY 23200 W$(LEN(W$)+1)=B$
IM 23350 REC$(ES(CH),EE(CH))=W$
GH 23500 IF CH=KF THEN SORT$(SS,SE)=REC$(ES(CH),ES(CH)+KN-1):GOSUB 29200
AD 23650 ? "K":POKE 752,1
CC 23800 DC=0:FOR I=1 TO NE
UX 23950 ? I;")";HEADING$(HS(I),HE(I));":";REC$(ES(I),EE(I))
QM 23960 DC=DC+1:IF DC=21 THEN ? :? "**PRESS ANY KEY FOR MORE ";:INPUT Q$:DC=0
FV 24100 NEXT I
DC 24250 GOTO 22450
UF 24400 POINT #4,SEC,CHAR
BD 24410 FOR I=1 TO NE
AA 24420 W$=REC$(ES(I),EE(I)):? #4;W$
GQ 24430 NEXT I
YB 24435 IF Q$="M" THEN ? #4;"M"
WK 24436 IF Q$="C" THEN ? #4;" "
EI 24440 RETURN
XF 24550 REM MISSING FILE ROUTINE
WW 24700 W$=FILEDB$(LEN(FILEDB$)-2):? CHR$(253)
ER 24710 IF PEEK(195)<>170 THEN ? "ERROR - MJDBASE HAS DETECTED AN":? "UNEXPECTED  ERROR:";PEEK(195);" ABORTING..":END
YF 24850 IF W$="STR" THEN ? "Database ";NAME$;" does not exist. Please use":? "Create Database (found on UTILITIES"
EV 24855 IF W$="STR" THEN ? "module)"
KO 25000 IF W$="IDX" THEN ? "The Index for Database ";NAME$;" is missing. Please use Re-Index Database"
UR 25150 IF W$="DAT" THEN ? "K↓The Data file for Database ";NAME$;" is ":? "missing.":? "Do you want MJDBASE to create it "
LG 25300 IF W$="DAT" THEN INPUT Q$:IF Q$="Y" THEN CLOSE #4:OPEN #4,8,0,FILEDB$:CLOSE #4
AW 25400 ? :? "- Then please use 'Open Database' again."
RQ 25450 ? :? "Press RETURN to continue";:INPUT W$
HM 25600 RUN
XO 25750 TRAP 40000:POINT #4,SEC,CHAR:FOR I=1 TO NE:INPUT #4;W$:NEXT I
UZ 25900 ? #4;"-"
IO 26050 TRAP 26200:SORT$(SS)=SORT$(SE+7):RECS=RECS-1:GOTO 26350
YG 26200 SORT$=SORT$(1,SS-1)
EN 26350 RETURN
YC 26500 REM CLOSE DATABASE/STORE INDEX
LP 26650 IF OPE<>1 THEN GOSUB 31150:RETURN
BK 26800 IF CHANGE=0 THEN RUN
UT 26950 TRAP 40000:TRAP 28150
OX 27100 GOSUB 19300
EV 27250 CLOSE #4:OPEN #4,8,0,FILEDB$
ZY 27400 ? #4;STR$(RECS):PUT #4,KN:PUT #4,KF:PUT #4,KD
TL 27550 FOR I=1 TO RECS
XZ 27700 W$=SORT$((I*(KN+6))-(KN+6-1),(I*(KN+6)))
XL 27850 ? #4;W$
GA 28000 NEXT I
SV 28150 CLOSE #4
IW 28300 POP :RUN
GF 28450 REM SORT ROUTINE
ZP 28600 IF RECS<2 THEN 29500
BQ 28750 ? CHR$(125);"SORT RECORD ORDER":? :? "Your Key Field is ";HEADING$(HS(KF),HE(KF))
OS 28760 IF KD=0 THEN ? "in Ascending order ";
AM 28770 IF KD=1 THEN ? "in Descending order ";
SB 28790 ? "for ";KN;" characters"
NL 28900 ? :? "Ascending/Descending";:INPUT Q$
CY 29050 KD=0:IF Q$="D" THEN KD=1
IG 29200 POKE 203,0:POKE 204,(KN-1):POKE 205,KN+6:POKE 206,KD
OM 29350 CHANGE=1:IF RECS>1 THEN X=USR(1664,ADR(SORT$),RECS)
XR 29500 ? "O.K!":RETURN
XE 29650 REM DATABASE DIRECTORY
DO 29800 DY$(2,2)=STR$(PEEK(1536)):TRAP 40000:TRAP 30850:CLOSE #4:OPEN #4,6,0,DY$
GE 29950 ? CHR$(125);"DIRECTORY OF DATABASES"
CL 30100 ? :?
JE 30250 INPUT #4;W$
VN 30400 IF W$(10,12)="SEC" THEN 30850
PC 30550 ? W$(3,10)
BA 30700 GOTO 30250
PG 30850 CLOSE #4:? :? "Press RETURN to continue";:INPUT W$
DB 31000 RETURN
TK 31150 ? :? :? "Open database first"
YG 31300 FOR I=1 TO 100:NEXT I:RETURN
JX 31500 REM SET UP DRIVE CONFIG
DI 31505 ? CHR$(125);
CQ 31510 ? "KDRIVE SET UP":? :? "Current Configuration=";PEEK(1536);" Drive":? :? :? "1 Drive or 2 Drives ";:INPUT DR
WS 31520 IF DR>2 THEN 31510
JG 31530 POKE 1536,DR:IF OPE=1 THEN FILEDB$(2,2)=STR$(DR)
EG 31540 RETURN
```

```
EI 1 REM ********************************
JE 2 REM *            MJDBASE           *
WB 3 REM *      by Michael Jackson      *
EB 4 REM * ---------------------------- *
RG 5 REM *    LISTING 3 - UTILITIES     *
ED 6 REM * ---------------------------- *
JA 7 REM *  PAGE 6 MAGAZINE - ENGLAND   *
EP 8 REM ********************************
NO 9 REM
LP 100 GOTO 6100
FQ 150 REM RE-INDEX DATABASE
RW 155 GOSUB 200
ZL 160 GOSUB 1990
ZL 170 RETURN
CX 200 REM SELECT DATABASE
JN 250 IF PEEK(1536)=1 THEN ? "K":? :? :? "Ensure that the Data disk is in Drive 1.":? :? "Press RETURN...";:INPUT W$
JG 300 ? CHR$(125);"Select Database":? :? "Enter Database (L for list)":? :? "Name ";:INPUT NAME$:FILEDB$(4)=NAME$
OE 302 FILEDB$(LEN(FILEDB$)+1)=ST$
NX 305 TMP$(2,2)=STR$(PEEK(1536))
RJ 320 FILEDB$(2,2)=STR$(PEEK(1536))
BS 325 IF NAME$="L" THEN GOSUB 31000:GOTO 300
GI 500 TRAP 40000:TRAP 19000:CLOSE #4:OPEN #4,4,0,FILEDB$
RN 600 GET #4,NE
KZ 700 DIM ELSIZE(NE),NS(NE):FOR I=0 TO NE:ELSIZE(I)=0:NEXT I:RECSIZE=0
WH 800 FOR I=1 TO NE
VC 900 GET #4,W:ELSIZE(I)=W:NS(I)=W
HM 1000 RECSIZE=RECSIZE+ELSIZE(I)
ER 1100 NEXT I
TS 1200 DIM REC$(RECSIZE),HEADING$(12*NE),ES(NE),EE(NE),HS(NE),HE(NE),SORT$(FRE(0)-200):EE(0)=0
OU 1210 HEADING$="":FOR I=1 TO NE
BE 1220 INPUT #4;W$:HEADING$(LEN(HEADING$)+1)=W$
EV 1300 NEXT I
KM 1400 FOR I=1 TO NE
NS 1500 ES(I)=EE(I-1)+1
EB 1600 EE(I)=ES(I)+ELSIZE(I)-1
UY 1700 HS(I)=(12*I-11):HE(I)=I*12
FF 1800 NEXT I
```

```
OO 1900 CLOSE #4
FR 1905 IF CHOICE=1 THEN RETURN
OJ 1910 GOSUB 6000:TRAP 40000:TRAP 19000:CLOSE #4:OPEN #4,4,0,FILEDB$
SM 1915 TRAP 40000:TRAP 1970
ZB 1920 INPUT #4;W$:RECS=VAL(W$):GET #4,KN:GET #4,KF:GET #4,KD
WQ 1930 FOR I=1 TO RECS
XV 1940 INPUT #4;W$
KK 1950 SORT$(LEN(SORT$)+1)=W$
FZ 1960 NEXT I
DG 1970 GOSUB 4800
BP 1980 RETURN
BS 1990 REM Sort records
JO 2200 ? CHR$(125):?
IW 2300 FOR I=1 TO NE:? I;"  ";HEADING$(HS(I),HE(I));"   (";ELSIZE(I);" Chars)":NEXT I
CN 2400 ? :? "ENTER KEY FIELD";:INPUT KF
JV 2500 ? :? "NO. CHARS";:INPUT KN:IF KN<1 OR KN>ELSIZE(KF) THEN ? "ERROR IN SIZE":GOTO 2500
VK 2600 S=0:? :? "ASCENDING/DESCENDING";:INPUT W$:IF W$="D" THEN S=1
CC 2700 SORT$="":RECS=0
DJ 2800 GOSUB 5900
SR 2900 TRAP 40000:TRAP 19000:SORT$="":CLOSE #4:OPEN #4,4,0,FILEDB$
LF 2910 TRAP 40000:TRAP 3700
KP 3000 NOTE #4,SEC,CHAR
ZU 3010 REC$="":FOR I=1 TO NE
BQ 3020 INPUT #4;W$:REC$(LEN(REC$)+1)=W$
FA 3030 NEXT I
TT 3040 INPUT #4;Q$
LT 3100 IF Q$="-" THEN 3000
BZ 3200 SORT$(LEN(SORT$)+1)=REC$(ES(KF),ES(KF)+KN-1):S$=STR$(SEC):IF LEN(S$)<3 THEN S$(LEN(S$)+1)=B$
FL 3300 SORT$(LEN(SORT$)+1)=S$
VY 3400 S$=STR$(CHAR):IF LEN(S$)<3 THEN S$(LEN(S$)+1)=B$
BD 3500 SORT$(LEN(SORT$)+1)=S$:RECS=RECS+1:POSITION 10,12:? "Processing Record ";RECS
NY 3600 GOTO 3000
CD 3700 CLOSE #4:POKE 203,0:POKE 204,(0+(KN-1)):POKE 205,KN+6:POKE 206,S
WO 3800 IF RECS>1 THEN X=USR(1664,ADR(SORT$),RECS)
ZL 3900 GOSUB 6000
OX 4000 OPEN #4,8,0,FILEDB$
AV 4100 ? #4;STR$(RECS):PUT #4,KN:PUT #4,KF:PUT #4,S
TZ 4150 IF RECS=0 THEN 4600
VW 4200 FOR I=1 TO RECS
FZ 4300 W$=SORT$((I*(KN+6))-(KN+6-1),(I*(KN+6)))
XD 4400 ? #4;W$
FC 4500 NEXT I
AO 4600 RETURN
PB 4700 REM COMPACT DATABASE
RB 4701 GOSUB 200:? CHR$(125):? :? "COMPACTING DATABASE ";NAME$
FC 4702 GOSUB 4705
BC 4703 RETURN
EI 4704 REM WEEDS OUT DELETED RECORDS
RG 4705 TRAP 40000:TRAP 4750
FF 4710 CLOSE #4:GOSUB 5900
OE 4715 OPEN #4,4,0,FILEDB$
KQ 4720 OPEN #2,8,0,TMP$
AU 4722 REC$="":FOR I=1 TO NE
CV 4724 INPUT #4;W$:REC$(LEN(REC$)+1)=W$
GG 4725 NEXT I
KE 4726 INPUT #4;Q$:IF Q$="-" THEN WD=WD+1:POSITION 10,7:? WD;" Record(s) removed.":GOTO 4722
MH 4728 FOR I=1 TO NE
EG 4730 W$=REC$(ES(I),EE(I)):? #2;W$
FX 4732 NEXT I
VK 4736 ? #2;Q$
UG 4740 GOTO 4722
HM 4750 CLOSE #4:CLOSE #2
EM 4755 XIO 33,#4,0,0,FILEDB$
KM 4757 TMP$(LEN(TMP$)+1)=",":TMP$(LEN(TMP$)+1)=FILEDB$(4)
LJ 4760 XIO 32,#4,0,0,TMP$
NN 4762 ? :? "Re-establishing Index...."
CL 4765 GOSUB 2700
BL 4770 RETURN
WP 4800 REM DISPLAY DATABASE STRUCTURE
ZZ 4900 ? CHR$(125);"Structure of ";NAME$:? "────────────────────────────────────"
EO 5000 ? "No.   Field Name          Field Size"
KK 5100 FOR I=1 TO NE
YA 5200 ? I;"      ";HEADING$(HS(I),HE(I));"           ";ELSIZE(I)
EZ 5300 NEXT I
XF 5310 ? :? "Key field is ";HEADING$(HS(KF),HE(KF));" (";KN;" chars)"
CV 5320 IF KD=1 THEN ? "and is descending":GOTO 5340
AV 5330 ? "and is ascending":? :?
OB 5340 ? "Records in Database=";RECS:?
BX 5400 ? "Press any key to return":POKE 764,255
YY 5500 IF PEEK(764)=255 THEN 5500
GH 5600 POKE 764,255
AR 5700 RETURN
GX 5800 FILEDB$(LEN(FILEDB$)-3)=ST$:RETURN
OM 5900 FILEDB$(LEN(FILEDB$)-3)=DAT$:RETURN
CC 6000 FILEDB$(LEN(FILEDB$)-3)=IDX$:RETURN
CM 6100 REM INITIALISE VARIABLES
QE 6200 DIM FILEDB$(15),NAME$(8),ST$(4),DAT$(4),W$(255),B$(255),S$(3):B$(1)=" ":B$(255)=" ":B$(2)=B$:NAME$=""
UJ 6300 DIM Q$(1),DY$(15),TMP$(32),IDX$(4):IDX$=".IDX":DY$="D1:*.STR"
NZ 6400 FILEDB$="D1:":DAT$=".DAT":ST$=".STR"
TH 6500 REM MENU
DX 6600 TMP$="D1:TEMP":POKE 82,0:GRAPHICS 0:POKE 710,128:? " MJDBASE UTILITIES - By M. Jackson"
MP 6650 ? "──────────────────────────────────────":? " Version 3.0 01/11/86":? "──────────────────────────────────────"
OE 6700 ? "Current Drive set up= ";PEEK(1536);" Drive(s)":? "──────────────────────────────────────":? :?
XA 6900 ? "1) Create Index    2) Compact Database":? :? "3) Create Database 4) MJDBASE-MANAGER"
OD 6950 ? :? "5) D.B Directory";
CZ 6960 ? "    6) Delete/Clear D.B"
TV 6970 ? :? "7) Drive Set Up     8) Restructure"
NO 6980 ? :? "9) Revive Records"
IJ 7000 TRAP 40000:TRAP 6500:POKE 195,0:? :? "Choice:";:INPUT CHOICE
MH 7100 ON CHOICE GOSUB 150,4700,8000,7300,31000,20000,32000,23000,21200
OC 7200 CLOSE #4:RUN
IO 7300 IF PEEK(1536)=1 THEN ? "K":? :? "Ensure Master Disk is in Drive 1":? :? "Press RETURN ";:INPUT W$
LH 7310 RUN "D:MJDBASE2.MGR"
IO 8000 REM create database
RR 8010 ? CHR$(125);"CREATE DATABASE":? :? :CLR
JY 8015 DIM NAME$(8),FILEDB$(15):FILEDB$="D1:":FILEDB$(2,2)=STR$(PEEK(1536))
GL 8017 ? :? "Enter name ";:INPUT NAME$:FILEDB$(4)=NAME$:FILEDB$(LEN(FILEDB$)+1)=".STR"
PI 8020 ? "How many fields ";:INPUT NE
CO 8030 DIM HEADING$(NE*12),HS(NE),HE(NE),ELSIZE(NE),W$(255),B$(255):B$(1)=" ":B$(255)=" ":B$(2)=B$
VO 8040 ? :? :HEADING$=""
GZ 8045 ? "Please enter Field Details....":?
LA 8050 FOR I=1 TO NE
ZY 8055 ? CHR$(125);"CREATE DATABASE - FIELD DETAILS"
KM 8060 ? :? "Field ";I:? "──────────────────────────────────────":? "Name (12 Chars max)";:INPUT W$:W$(LEN(W$)+1)=B$
AW 8062 HEADING$(LEN(HEADING$)+1)=W$(1,12):HS(I)=12*I-11:HE(I)=12*I
NG 8070 TRAP 40000:TRAP 8070:? "Size (120 Chars max)";:INPUT SIZE:IF SIZE<121 THEN ELSIZE(I)=SIZE:? :?
AH 8075 IF SIZE>120 THEN ? :? CHR$(253);"120 CHARACTERS MAXIMUM":GOTO 8070
FU 8080 NEXT I
XE 8081 ? CHR$(125);"INDEX CHOICE":? :?
HY 8082 FOR I=1 TO NE:? I;")";HEADING$(HS(I),HE(I));"  ";ELSIZE(I);" CHARACTERS":NEXT I
HQ 8083 ? :? "ENTER FIELD NUMBER FOR KEY ";:INPUT KF:IF KF>NE THEN ? CHR$(253):GOTO 8083
GO 8084 ? :? "ENTER LENGTH OF KEY ";:INPUT KN:IF KN>ELSIZE(KF) THEN ? CHR$(253);"TOO LONG ":GOTO 8084
UA 8085 ? :? "ASCENDING OR DESCENDING ";:INPUT W$:IF W$<>"A" AND W$<>"D" THEN GOTO 8085
TT 8086 KD=0:IF W$="D" THEN KD=1
GH 8089 HA=ADR(HEADING$)-1
RE 8090 FOR I=1 TO LEN(HEADING$)
TU 8100 W=PEEK(HA+I):POKE HA+I,W+128
FB 8110 NEXT I
TA 8111 ? CHR$(125);
YK 8112 ? "CREATING DATABASE":? :? "About to create database ";NAME$;" on":? "Drive ";PEEK(1536);" Press RETURN";:INPUT W$
HD 8120 CLOSE #4:OPEN #4,8,0,FILEDB$
BO 8130 PUT #4,NE
KZ 8140 FOR I=1 TO NE
GZ 8150 PUT #4,ELSIZE(I)
FQ 8160 NEXT I
LZ 8165 FOR I=1 TO NE
GK 8170 W$=HEADING$(I*12-11,I*12):? #4;W$
GN 8175 NEXT I
PD 8180 CLOSE #4
JY 8181 IF CHOICE=8 THEN RETURN
BI 8185 RECS=0
HR 8210 FILEDB$(LEN(FILEDB$)-2)="IDX"
PL 8220 OPEN #4,8,0,FILEDB$
AH 8230 ? #4;STR$(RECS):PUT #4,KN:PUT #4,KF:PUT #4,KD:CLOSE #4
KN 8240 ? :? "Database ";NAME$;" created...":? :? "Key Field is:"
SP 8245 ? HEADING$(HS(KF),HE(KF));"  (";KN;" Chars)"
ZZ 8250 IF KD=0 THEN ? "in ascending order"
PP 8251 IF KD=1 THEN ? "in descending order"
XY 8260 CLOSE #4:POKE 764,255:? :? "PRESS ANY KEY "
HP 8270 IF PEEK(764)=255 THEN 8270
BM 8280 POKE 764,255:RUN
WF 19000 REM MISSING FILE ROUTINE
WO 19010 W$=FILEDB$(LEN(FILEDB$)-2):? CHR$(253)
BF 19015 IF PEEK(195)<>170 THEN ? "UNEXPECTED ERROR HAS OCCURRED -";PEEK(195);". PLEASE CONSULT MANUAL. ABORTING.":END
XU 19020 IF W$="STR" THEN ? "Database ";NAME$;" does not exist. Please use Create Database"
LH 19030 IF W$="IDX" THEN ? "The Index for Database ";NAME$;" is missing. Please use Re-Index Database"
RE 19040 IF W$="DAT" THEN ? "The Data file for Database ";NAME$;" is missing. Creating it. Please wait...."
YD 19050 IF W$="DAT" THEN CLOSE #4:OPEN #4,8,0,FILEDB$:CLOSE #4
RP 19060 ? :? "Press RETURN to continue";:INPUT W$
ID 19070 RUN
RN 20000 REM DELETE/CLEAR DATABASE
BK 20010 GOSUB 200
CA 20020 ? :? "Clear or Delete";:INPUT Q$
VL 20030 IF Q$="C" THEN GOSUB 21000:GOTO 20050
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SM 20040 IF Q$="D" THEN GOSUB 21500:POP :
   RUN
DE 20045 ? CHR$(253):GOTO 20020
DS 20050 RETURN
TW 21000 REM CLEAR DATABASE
MH 21005 GOSUB 22000
LJ 21010 GOSUB 5900
PU 21020 CLOSE #4:OPEN #4,8,0,FILEDB$:CLO
   SE #4
HI 21030 GOSUB 6000
RA 21040 OPEN #4,8,0,FILEDB$
OR 21050 ? #4;STR$(0):PUT #4,KN:PUT #4,KF
   :PUT #4,KD
SI 21060 CLOSE #4
EC 21070 RETURN
ML 21200 REM REVIVE RECORDS
VE 21205 DELF=0
BS 21210 GOSUB 200
LT 21220 GOSUB 5900
GZ 21230 TRAP 40000:TRAP 19000:CLOSE #4:O
   PEN #4,12,0,FILEDB$:TRAP 40000:TRAP 21
   340
JG 21240 NOTE #4,SEC,CHAR
ZO 21250 REC$="":FOR I=1 TO NE:INPUT #4;W
   $:REC$(LEN(REC$)+1)=W$:NEXT I
SX 21260 INPUT #4;W$:IF W$<>"-" THEN 2124
   0
RW 21270 ? CHR$(125);"REVIVE DELETED RECO
   RDS"
XY 21280 ? :FOR I=1 TO NE:? HEADING$(HS(I
   ),HE(I));":";REC$(ES(I),EE(I)):NEXT I
HB 21290 DELF=1:? :? "Do you want to revi
   ve ";:INPUT Q$:IF Q$<>"Y" THEN 21240
ZL 21300 POINT #4,SEC,CHAR:FOR I=1 TO NE:
   W$=REC$(ES(I),EE(I)):? #4;W$:NEXT I
JE 21310 ? #4;" ":GOTO 21240
OX 21340 IF DELF=0 THEN GOTO 21370
EJ 21350 ? CHR$(125);"REVIVE DELETED RECO
   RDS":? :? :? "Re-establishing Index...
   ."
JX 21360 GOSUB 2700
EL 21370 RETURN
EY 21500 REM DELETE DATABASE
MB 21510 GOSUB 22000
JO 21520 FILEDB$(LEN(FILEDB$)-3)=ST$
HX 21530 XIO 33,#4,0,0,FILEDB$
MK 21540 GOSUB 5900
IF 21550 XIO 33,#4,0,0,FILEDB$
IJ 21560 GOSUB 6000
IN 21570 XIO 33,#4,0,0,FILEDB$
JU 21580 POP :RUN
AX 22000 ? CHR$(253);"Are you sure";:INPU
   T Q$:IF Q$<>"Y" THEN POP :RUN
DG 22010 RETURN
ZO 23000 REM RESTRUCTURE DATABASE
BQ 23010 GOSUB 200
PM 23030 ? CHR$(125);"RESTRUCTURE DATABAS
   E":? :?
RF 23040 FOR I=1 TO NE:? I;") ";HEADING$(
   HS(I),HE(I));"  (";NS(I);")":NEXT I
PU 23050 TRAP 40000:TRAP 23050:? :? "Whic
   h field to change size (0 to End) ";:I
   NPUT CF:IF CF>NE THEN 23050
UL 23055 IF CF=0 THEN 23090
UW 23060 ? :? HEADING$(HS(CF),HE(CF));" i
   s currently ";NS(CF)
NR 23070 ? :? "Enter its new size ";:INPU
   T W:IF W>0 AND W<121 THEN NS(CF)=W
AL 23080 GOTO 23030
LU 23090 REM COPY TO NEW FILE
KQ 23095 ? CHR$(125):? :? "Re-organising
   Database ";NAME$;"...";? :? "Please wa
   it."
MX 23100 TRAP 40000:TRAP 19000
IO 23110 CLOSE #4:GOSUB 5900
OR 23120 OPEN #4,4,0,FILEDB$
FB 23130 OPEN #2,8,0,TMP$
NP 23135 TRAP 40000:TRAP 23220
PT 23140 FOR I=1 TO 9999
BQ 23150 FOR II=1 TO NE
AT 23160 INPUT #4,W$
OV 23170 IF NS(II)=ELSIZE(II) THEN ? #2;W
   $:GOTO 23200
KH 23180 W$(LEN(W$)+1)=B$:W$=W$(1,NS(II))
WE 23190 ? #2;W$
QJ 23200 NEXT II
UB 23205 INPUT #4;W$:? #2;W$
LK 23207 POSITION 10,7:? "Record ";I;" re
   structured..."
GA 23210 NEXT I
YP 23220 CLOSE #4:CLOSE #2:TRAP 40000:TRA
   P 19000
HS 23230 XIO 33,#4,0,0,FILEDB$
DA 23240 TMP$(LEN(TMP$)+1)=",":TMP$(LEN(T
   MP$)+1)=FILEDB$(4)
IO 23250 XIO 32,#4,0,0,TMP$
VG 23260 IF KN>NS(KF) THEN KN=NS(KF)
CW 23270 ? :? "Re-establishing Index..."
YI 23275 FOR I=1 TO NE:ELSIZE(I)=NS(I):NE
   XT I
KG 23280 GOSUB 2700
ML 23290 GOSUB 5800
KB 23300 GOSUB 8120
DR 23310 RETURN
VD 31000 REM DATABASE DIRECTORY
WL 31010 DY$(2,2)=STR$(PEEK(1536)):TRAP 4
   0000:TRAP 31090:CLOSE #4:OPEN #4,6,0,D
   Y$
EC 31020 ? CHR$(125);"DIRECTORY OF DATABA
   SES"
CW 31030 ? :?
IW 31040 INPUT #4;W$
TA 31045 IF W$(10,12)="SEC" THEN 31090
OP 31050 ? W$(3,10)
AF 31070 GOTO 31040
PA 31090 CLOSE #4:? :? "Press RETURN to c
   ontinue";:INPUT W$
DE 31100 RETURN
JK 32000 REM SET UP DRIVE CONFIG
CV 32005 ? CHR$(125);
JC 32010 ? "DRIVE SET UP":? :? "Current C
   onfiguration=";PEEK(1536);" Drive":? :
   ? :? "1 Drive or 2 Drives ";:INPUT DR
SU 32020 IF DR>2 THEN 32010
IT 32030 POKE 1536,DR:IF OPE=1 THEN FILED
   B$(2,2)=STR$(DR)
DT 32040 RETURN
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WHAT HAVE YOU MISSED?

BACK ISSUES

PAGE 6 back issues represent an excellent way of increasing the enjoyment of your Atari with articles to enlighten you, programs to type in and reviews of software to guide you. Almost all of the content of past issues will be as fresh and relevant today as when it appeared – increase your enjoyment now, before it's too late!

ISSUE 20 – GRAPHICS SPECIAL. A super special issue with a graphics theme. Draw some masterpieces with GRAPHICS WORKSHOP and explore your graphics potential with Colour Palette, Picloada, Colour Attributes and CIO Slideshow. An in-depth review of Printshop and Graphics Art Department, the final part of Display Lists and the Adventure column. 11 pages devoted to the ST plus a colour feature ATARI ART and ST GALLERY. And there's more! BLOCKBREAKER is one of the best games to have been published in any magazine. Don't miss it!

ISSUE 21 – A packed issue with games, TRAIN CRAZY, Revenger and Forklift. Utilities Scalemaster, Quick Disassembler and Measuring Temperature. Programming hints with Doing The Impossible, Error 8 Solved and THE GUIDE TO ERROR CODES. Reviews of Flight Simulator II, Hitchhiker's Guide to the Galaxy, and the latest Adventures. For the ST a DEGAS to NEO converter, Lattice C reviewed and reviews of a whole host of software.

ISSUE 22 – More serious users will enjoy SMARTSHEET, a Visicalc like type-in spreadsheet, and our review of Paperclip whilst gamesters will puzzle over Tricky Cubes and try to survive Hidden Depths. The Guide to Error Codes is concluded and there are articles on Fractals, Tape Problems and some less-well known Adventures. Loads of reviews and some great new routines for Blockbreaker. ST users will find out how to program Sprites and can read reviews on Time Bandit, Pro-Fortran 77, VIP Professional and more.

ISSUE 23 – Another superb machine language game Water Ski School will test your reflexes. Wordsearch will challenge those who like puzzles and other listings include Superclown and the utilities Xref and Verify. A huge review of Ultima IV heads a comprehensive review section and Going Online Part 1 will let you know if telecommunications is for you. ST owners can discover how to get a bigger screen on their colour monitor and read reviews of Zoomracks, Sierra On-Line adventures and Pro-Pascal amongst others. Also, is it worth adding a 5¼" drive to your ST?

ISSUE 24 – The biggest issue so far published! Great ST section with info about ST disks and cartridges and loads of reviews. For 8-bit users there is MUNCHY MADNESS, the best game we have ever published plus a super cheque book utility AUTOCHECK. Plus all about checking your disk drive, another game, more utilities, reviews of RAMBIT, Adventure games and lots more. Too much in this issue to list fully!

ISSUE 25 – Another biggie! A must for 1029 printer owners with 3 great utilities including a screen dump. A super Japanese chess game called SHOGI, a type in REVISION C BASIC, a full feature on disks and more. For ST, type in OTHELLO, reviews of LEADER BOARD and MEAN 18, Hints and Tips and several other reviews and articles.

ISSUE 26 – SOLID MODELLING is one of the best programs we have published. Be creative! Other programs include SOURCE WRITER for machine code programmers, FLEXIBLE FINGERS to help you type, NUTS and more. Reviews of TRIVIAL PURSUIT, DVC/65, SPEEDSCRIPT and much, much more. ST users can learn all about HARD DISKS, FAST BASIC, TYPESETTER ELITE, DEGAS ELITE and read reviews on a whole lot more software.

ISSUE 27 - Some cracking listings for the 8-bit. In GREAT BRITAIN LTD. you can be the Chancellor and help run the country. COMPUTER GAMMON is a great Atari version of backgammon and there's ANTS IN YOUR PANTS, DISK COMMAND and others. There is a feature on word processing and stacks of reviews. The ST section includes an in-depth review of ART DIRECTOR and a neat little program to put scrolling stars on your screen! Lots of reviews including HABAVIEW, K-SPREAD 2, K-WORD and many more.

ISSUE 28 - Extend the incredible original Munchy Madness with the MUNCHY MADNESS SCREEN DESIGNER, play GREEDY CATERPILLARS with a friend, teach your children with MOST HEART MATHS or make up some crosswords with XWORD. A long feature on flight simulation programs, hints on ZORK and loads of reviews. For ST users, the first in a series of USING GEM from C plus FLIGHT SIMULATOR II reviews, new books from COMPUTE! and a whole stack of reviews.

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ISSUE 25 – Contains the chess program SHOGI, a page flipping demo, BOUNCING BERT, and three 1029 printer utilities, LIST 1029, SCREEN DUMP and SMALL FONT. A must for all 1029 owners.

ISSUE 26 – TWO virtually full sides with bonus screens for SOLID MODELLING! Check them out. Also SOURCE WRITER for machine code programmers, FLEXIBLE FINGERS to help you type, a game of NUTS, DESIGNER LABELS for EPSON printers and YOUR OWN CURSOR plus any others in this issue.

ISSUE 27 - Long listings include GREAT BRITAIN LTD. and COMPUTER GAMMON, two excellent programs. DISK COMMAND adds new commands to BASIC and TIMESCREEN will give you a new screen with a clock for typing in those programs. Plus all the other bits and pieces on a full disk.

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Cliffhanger

by Heath Lawrence

The year is 2010. Advancements in space technology have made it possible for Earth-based companies to establish mining operations throughout the solar system. A research team on Mars has uncovered rich deposits of vital minerals deep beneath the planet's surface.

Wasting no time, the enormous industrial firm of Hugopolis Inc. has set up a mining colony on the Red Planet but the mining is constantly causing huge chunks of rock and debris to hurtle from the excavation into the sides of the open mining pit, which threatens to bury the whole operation.

You must capture chunks of debris before they demolish the side of the pit. Your only equipment is a speedy Catcher Cage. To activate this Catcher Cage just type in the listing, checking it with TYPO 3 and SAVE a copy before you RUN it.

The Catcher Cage consists of two parts. There's a grabber that can be raised and lowered by pressing or releasing the joystick button. Attached to this is a pulley that moves sideways when you push the joystick left or right. You cannot move the grabber vertically and the pulley horizontally at the same time.

Any debris touched by the moving Catcher Cage will be caught and conveniently disposed of in a nearby acid bath. The lower down the pit you catch the debris, the more points you get.

Further complications? You bet! Mining on Mars releases highly explosive Radon gas bubbles into the atmosphere. Should your Catcher Cage touch one, the gas within will be released and destroy you instantly.

Also lurking in the pit are harmless blue creatures called Gruds. Offworld protests by wildlife preservation groups have made destroying these creatures illegal. Killing a Grud results in the loss of five points.

Each time a chunk of rock strikes the cliff face, the danger level (shown in the bottom right corner) increases by one. When the stress reaches five, it makes the cliff collapse, destroying the mining operation and you. The Catcher Operator's booth is stationed at the top of this cliff, so when it collapses, you are buried.

Cliffhanger is the first program from ANTIC magazine to be published under our exchange agreement. It first appeared in ANTIC Magazine Volume 5 Number 7.

Heath Lawrence lives in Port Elgin, Ontario, U.S.A. and has been programming his Atari for around five years.

The key to Cliffhanger is anticipating where the next chunk of debris will hit and getting there first with your Catcher Cage. Another useful method is the 'fishing technique'. Just press the joystick button and let the Catcher Cage descend a little way below the debris. When the rock is directly over the grabber chain, release the button. Also, the Catcher Cage moves twice as fast as the debris, so you'll probably get another chance if you miss first time.

Mining on Mars in the 21st Century

```
EI 1 REM *******************************
NE 2 REM *          CLIFFHANGER         *
AL 3 REM *       by Heath Lawrence      *
OM 4 REM *   (c) 1986 ANTIC PUBLISHING  *
EC 5 REM * ---------------------------- *
UR 6 REM * Republished with permission *
QU 7 REM *       by PAGE 6 - ENGLAND    *
EP 8 REM *******************************
NO 9 REM
QM 10 GOSUB 610
TT 20 GOSUB 500:GOSUB 460:GOSUB 480:GOTO
   160
MP 30 REM MOVE DEBRIS
TI 40 OX=DX:DX=DX-0.5:IF DX<>INT(DX) THEN
    RETURN
NS 50 POKE 77,0:POKE SC+OX+20*DY,DP:IF DX
   <1 THEN GOSUB 350:GOSUB 460:RETURN
AU 60 DP=PEEK(SC+INT(DX)+20*DY):IF DP=172
    THEN GOSUB 210:GOTO 160
NU 70 POKE SC+INT(DX)+20*DY,240:RETURN
UO 80 REM DOWN
LW 90 GOSUB 40:POKE SC+PX+20*RY,107:RY=RY
   +1:RP=PEEK(SC+PX+20*RY):IF RP=240 THEN
    GOSUB 210:GOTO 160
LE 100 ON RP=168 GOSUB 290:ON RP=110 GOSU
   B 320:IF STRIG(0)<>0 OR RY>18 THEN GOS
   UB 130:GOTO 160
PI 110 POKE SC+PX+20*RY,172:GOTO 90
IR 120 REM UP
IT 130 FOR Y=RY TO 2 STEP -1:RP=PEEK(SC+P
   X+20*Y):IF RP=240 THEN RY=Y:GOSUB 210:
   GOTO 160
JB 140 POKE SC+PX+20*Y,172:POKE SC+PX+20*
   Y,0:NEXT Y:POKE SC+PX+20*2,172:RETURN
```

```
QV 150 REM PULLY
LR 160 GOSUB 40:S=STICK(0):SOUND 1,0,0,0:
    IF STRIG(0)=0 THEN RY=2:GOTO 90
ZL 170 ON S=15 GOTO 160
CL 180 SOUND 1,255,6,8:POKE SC+PX+20*1,98
    :POKE SC+PX+20*2,0:PX=PX-1*(S=11)+1*(S
    =7):PX=PX-1*(PX>18)+1*(PX<1)
PI 190 POKE SC+PX+20*1,33:POKE SC+PX+20*2
    ,172:GOTO 160
GN 200 REM GOT DEBRIS
GY 210 FOR Y=RY TO 2 STEP -1:POKE SC+PX+2
    0*Y,173:FOR D=1 TO 30:NEXT D:POKE SC+P
    X+20*Y,0:NEXT Y
OR 211 POKE SC+PX+20*2,172
HP 220 FOR X=PX TO 1 STEP -1:SOUND 1,255,
    6,8:POKE SC+X+20*1,33:POKE SC+X+20*2,1
    73:FOR D=1 TO 30:NEXT D:PX=1
BR 230 POKE SC+X+20*1,98:POKE SC+X+20*2,0
    :NEXT X:POKE SC+21,33:POKE SC+41,172:F
    OR D=1 TO 25:NEXT D
XV 231 FOR Y=3 TO 20
XK 240 POKE SC+1+20*Y,240:FOR D=1 TO 15:N
    EXT D:POKE SC+1+20*Y,0:SOUND 1,Y,10,8:
    NEXT Y:FOR X=1 TO 10 STEP 0.2
CW 250 SOUND 1,10,8,X:POKE SC+401,182
PK 251 IF X>5 THEN POKE SC+401,183:NEXT X
    :POKE SC+401,0:FOR X=10 TO 0 STEP -0.3
FX 260 SOUND 1,10,8,X:NEXT X:FOR X=1 TO D
    Y:SCO=SCO+1:FOR J=1 TO 50 STEP 9:SOUND
     1,J,8,10:SOUND 1,0,0,0:NEXT J
VY 270 GOSUB 480:NEXT X:GOSUB 460:RETURN
OV 280 REM HIT GRUD
QP 290 FOR X=1 TO 5:FOR Z=1 TO 50 STEP 5:
    SOUND 1,Z,10,8:SOUND 2,Z+50,10,8:NEXT
    Z:SCO=SCO-1:IF SCO<0 THEN SCO=0
KR 300 GOSUB 480:NEXT X:SOUND 1,0,0,0:SOU
    ND 2,0,0,0:RETURN
QQ 310 REM HIT GAS BUBBLE
WW 320 FOR X=100 TO 255 STEP 4:SOUND 1,X,
    8,8:POKE SC+PX+20*RY,246:POKE SC+PX+20
    *RY,119:NEXT X
JO 321 POKE SC+PX+20*RY,117
ML 330 SOUND 1,0,0,0:FOR D=1 TO 100:NEXT
    D:GOTO 420
FZ 340 REM DEBRIS IMPACTS
OS 350 FOR X=100 TO 255 STEP 4:SOUND 1,X,
    8,8:POKE SC+20*DY,246:POKE SC+20*DY,11
    9:NEXT X
MO 351 POKE SC+20*DY,248:DA=DA+1
BE 360 SOUND 1,0,0,0:GOSUB 480:ON DA=5 GO
    TO 380:RETURN
XG 370 REM COLLAPSE!
FN 380 FOR Y=1 TO 19:POSITION 1,Y:? #6;RO
    PE$:FOR D=1 TO 15:NEXT D:POSITION 1,Y:
    ? #6;BL$:SOUND 1,Y+50,10,8
MQ 381 NEXT Y
UN 390 FOR Y=1 TO 19:SOUND 1,Y+200,8,8:PO
    SITION 0,Y:? #6;"D":FOR D=1 TO 15:NEXT
     D:POSITION 0,Y:? #6;" "
MS 391 NEXT Y
YY 400 RESTORE 730:FOR Y=20 TO 15 STEP -1
    :READ Z:FOR X=0 TO 6-Z:POSITION X,Y:?
    #6;"■":NEXT X:FOR D=1 TO 20
DZ 401 NEXT D
RV 410 NEXT Y:SOUND 1,0,0,0:FOR D=1 TO 35
    0:NEXT D
LW 420 GRAPHICS 17:POKE 756,224:POSITION
    4,5:? #6;"■GAME OVER■":POSITION 5,10:?
     #6;"score:";SCO:POSITION 5,11
RC 430 ? #6;"-----":POSITION 3,16:? #6;"P
    RESS <start>"
UU 440 ON PEEK(53279)<>6 GOTO 440:GOTO 20
QZ 450 REM GET DEBRIS Y
MN 460 DY=INT(RND(0)*17)+3:DP=PEEK(SC+18+
    20*DY):POKE SC+18+20*DY,240:DX=18:RETU
    RN
MD 470 REM UPDATE SCORE
KH 480 POSITION 7,23:? #6;SCO;"   ":POSIT
    ION 16,23:? #6;DA:RETURN
TZ 490 REM PLAYFIELD
HL 500 GRAPHICS 17:POKE 756,ST/256:SC=PEE
    K(88)+256*PEEK(89):SCO=0:DA=0:PX=10:RY
    =2:DX=18:FOR Y=2 TO 22
FI 501 POSITION 0,Y
IY 510 ? #6;"■":POSITION 19,Y:? #6;"■":NE
    XT Y:FOR X=0 TO 19:POSITION X,21:? #6;
    "■":POSITION X,22:? #6;"■"
LU 511 NEXT X
EF 520 POSITION 2,20:? #6;"■":POSITION 1,
    21:? #6;"G":POSITION 18,20:? #6;"T":PO
    SITION 0,2:? #6;"I"
SN 521 POSITION 19,2
FO 530 ? #6;"■":POSITION 0,1:? #6;"D":POS
    ITION 19,1:? #6;"F":FOR X=1 TO 18:POSI
    TION X,1:? #6;"b":NEXT X
OT 540 POSITION 19,1:? #6;"F":FOR X=1 TO
    18:POSITION X,1:? #6;"b":NEXT X:POSITI
    ON 1,23:? #6;"SCORE:          u:"
JU 550 POSITION 10,1:? #6;"A":POSITION 10
    ,2:? #6;"L"
ZR 560 REM SET OBSTACLES
XL 570 FOR X=2 TO 17:DO=INT(RND(0)*2):ON
    DO=1 GOTO 590:T=INT(RND(0)*2):SHA=200*
    (T=0)+110*(T=1)
JO 580 POSITION X,INT(RND(0)*17)+3:? #6;C
    HR$(SHA)
SX 590 NEXT X:RETURN
RV 600 REM REDEFINE
NW 610 DIM ROPE$(18),BL$(18):ROPE$="yyyyy
    yyyyyyyyyyyyy":BL$="
    ":RESTORE 660
JC 611 POKE 106,PEEK(740)-5
YN 620 GRAPHICS 18:SETCOLOR 4,2,2:POSITIO
    N 4,2:? #6;"CLIFFHANGER":POSITION 1,5:
    ? #6;"BY HEATH LAWRENCE"
NJ 621 POSITION 4,8
YH 630 ? #6;"please wait":ST=(PEEK(106)+1
    )*256:FOR X=0 TO 1023:POKE ST+X,PEEK(5
    7344+X):NEXT X
GP 631 FOR SHAPE=1 TO 20
EV 640 READ ICS:FOR X=0 TO 7:READ BYTE:PO
    KE ST+ICS+X,BYTE:NEXT X:NEXT SHAPE:RET
    URN
OQ 650 REM SHAPE DATA
EN 660 DATA 264,126,255,129,60,129,255,60
    ,24,272,0,0,0,85,170,0,0,0,288,126,129
    ,185,145,181,169
TZ 665 DATA 255,255,304,15,19,37,73,255,3
    ,5,13,312,213,107,222,107,214,181,218,
    107,320,0,24,60,90
VS 670 DATA 126,36,90,36,328,214,107,180,
    104,176,108,218,116,336,107,214,45,22,
    13,54,91,46,344,16,8
JP 675 DATA 16,8,16,8,16,8,352,24,24,60,1
    02,195,195,102,36,360,24,24,60,110,239
    ,110,60,24,368
ZF 680 DATA 0,60,110,94,94,110,60,0,384,0
    ,28,110,219,247,92,48,0,392,0,0,0,24,5
    2,106,210
MW 685 DATA 173,416,1,1,2,7,14,21,122,171
    ,424,129,90,60,90,126,36,90,129,432,0,
    18,64,4,32
DS 690 DATA 8,64,0,440,65,8,32,129,36,0,3
    4,144,448,213,166,58,192,64,128,105,15
    0,456,0,48,72
IK 695 DATA 72,132,132,3,0
KA 720 REM CLIFF FALL DATA
ND 730 DATA 0,2,3,3,4,6
```

TURBO BASIC

A GRAPHICS DEMO

Turbo Basic has recently become very popular and we have received so many requests for more information about the various commands available and offers of programs written in Turbo Basic that from this issue we start a regular page devoted to Turbo Basic. The future of the column depends on you. We need *short* programs written in Turbo Basic to demonstrate some of the features of this amazing language together with an explanation of what the program does and how it is programmed. Anything will be considered provided it uses the commands unique to Turbo Basic and the only limitation is size – the program and article must not be more than one page in total. Let's hear from you.

To get the ball rolling from this issue, here is a short little graphics program very quickly thrown together to demonstrate how programs can be written in Turbo Basic easily and quickly. It is certainly not a great example of programming – you could do better – but it does show some of the features not available in ordinary Atari Basic. Study the listing carefully and you will begin to understand how programs can be structured in Turbo Basic.

The program simply draws circles in Graphics 8 to allow you to design patterns on screen. The joystick will move the cursor around and pressing the fire button will plot a circle of the size currently chosen. Just press START to choose another size and then press any key, the size is chosen quite arbitrarily from the keyboard.

It's not a brilliant program but was dead easy to write and it's fun. Let's see what you can do. We'll pay you £20 for any programs that are published. Remember they must have brief supporting documentation and must fit on one page.

WHAT IS TURBO BASIC?

Turbo Basic is a new Basic language for the Atari originally published in a German magazine and now released to the public domain. It adds over 60 new commands to Atari Basic, runs three to five times as fast, is totally compatible with all your existing programs and comes with a compiler to compile any Atari Basic or Turbo Basic program to run at machine language speed. You should be able to get a copy from any source of public domain software such as your local user group or a friend or even from the Page 6 Accessory Shop.

```
WO 1 REM ****************************
PA 2 REM *      TURBO BASIC DEMO    *
LC 3 REM *      by Les Ellingham    *
KB 5 REM * PAGE 6 MAGAZINE - ENGLAND *
WT 6 REM ****************************
NM 7 REM
KT 10 TRAP WHOOPS
QS 20 EXEC SETUP
HY 30 ------------------------------
DT 40 # HERE_WE_GO
EZ 50 IF PEEK(53279)=6 THEN EXEC KEY
YB 60 X=X+(STICK(0)=7)-(STICK(0)=11)
NW 70 Y=Y+(STICK(0)=13)-(STICK(0)=14):EXE
   C CURSOR
QX 80 IF PEEK(644)=0 THEN EXEC DRAW
RV 90 GO# HERE_WE_GO
OO 100 ------------------------------
CW 110 PROC SETUP
DH 120    GRAPHICS 8:X=180:Y=80:POKE 710,0
   :POKE 709,14
UI 130    DIM A$(8),B$(12):B$="PRESS A KEY
   ":A$="SIZE= "
QQ 140    OPEN #1,4,0,"K:"
VT 150 ENDPROC
PA 160 ------------------------------
EF 170 PROC DRAW
BP 180    FOR I=1 TO 30 STEP 2
IZ 190      COLOR 1:CIRCLE X,Y,I+SIZE
ZW 200    NEXT I
RO 210    FOR I=1 TO SIZE STEP 2
CS 220      COLOR 0:CIRCLE X,Y,I+SIZE-1
AC 230    NEXT I
VS 240 ENDPROC
OZ 250 ------------------------------
UY 260 PROC KEY
LY 270    POKE 764,255
XL 280    A$="SIZE=    ":TEXT 10,18,A$
NW 290    COLOR 1:TEXT 10,8,B$
NI 300    GET SIZE:SIZE=SIZE-48:A$(6)=STR$
   (SIZE)
TA 310    TEXT 10,18,A$
MW 320    COLOR 0:TEXT 10,8,B$
VR 330 ENDPROC
OY 340 ------------------------------
WS 350 PROC CURSOR
PA 360    COLOR 1:PLOT X,Y
OP 370    COLOR 0:PLOT X,Y
WB 380 ENDPROC
PI 390 ------------------------------
XT 400 # WHOOPS
LV 410 GRAPHICS 0:? "ERROR ";ERR;" IN LIN
   E ";ERL
```

program by Les Ellingham



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Did you know that you can read the joystick without a dozen IF ... THEN statements? In the second of our Tutorial Subroutines, Ian Finlayson presents a very compact subroutine to handle joystick input

2. JOYSTICK LOGIC

As I start the second in this series of tutorial subroutines I had better explain how all the subroutines will be laid out. In the last issue the disk contents subroutine started at line number 31000 (with a REM statement preceding it in line 30999); this time the subroutine starts at 31100 and from now on I will increment by 100 each time. This will allow you to store all the subroutines in one file rather than having to store each separately. The REM identifier statements will all be put ahead of the main line number at which the subroutine starts.

LOGICAL OPERATORS

My subroutine this time is based on the use of logical operators, and as some people have difficulty with the underlying concept I will try to explain first and then develop the subroutines. The logical operators are fast and they can be used to generate compact code.

The fundamental concept is this – The value of a logical statement is 1 if the statement is true and zero if the statement is false.

That is all very well, but what does it mean? An example would be the expression (A > B); this has a value of 1 if A is greater than B, and zero if A is less than or equal to B. It is quite easy to experiment with this technique by typing into your computer in direct mode. Try the following (each line must be completed with RETURN):

```
A=1 : B=1 : ? "(A>B)=" ; (A>B)

A=1 : B=0 : C=1 : IF A=B OR A=C THEN ?
"TRUE"
```

The relational operators are < (less than), > (more than), = (equal to), < = (less than or equal to), > = (more than or equal to), < > (not equal to). They can be used with the Unary Operator NOT and the Logical Operators AND and OR. NOT reverses the value of an expression so, for example, NOT(A = B) and A < > B are effectively the same.

READING THE JOYSTICK

Joystick position is obtained in Basic from STICK(0) for joystick port 1, STICK(1) for port 2. Alternatively PEEK(632) gives the same value as STICK(0)and PEEK(633) the same as STICK(1). The value returned depends on the direction in which the joystick is pressed. Eight different directions are detectable resulting in nine possible values including stick centred. Relating joystick direction to the points of the compass the values are as follows:

Position	Decimal	Binary
Centered	15	1111
N (Up)	14	1110
NE	6	0110
E (Right)	7	0111
SE	5	0101
S (Down)	13	1101
SW	9	1001
W (Left)	11	1011
NW	10	1010

The decimal numbers appear to be a rather random set but if you look at the binary equivalent in the third column a logical pattern appears showing that each cardinal point has a switch which controls one bit of a 4 bit number.

The fire button or trigger on the joysticks is detected in STRIG(0), STRIG(1) or by PEEK(644), PEEK(645). These return a value of 0 if the trigger is pressed and 1 if it is not.

THE FIRST JOYSTICK SUBROUTINE

The first subroutine gives only up/down and left/right movement.

Line 31100 - TT3 is the variable for position across the screen (or column position). This could be the position of the cursor or the position of a player. TT3 must be changed to the variable name used in the main programme. TT3MAX is the variable which defines the highest value to which the horizontal position can go, normally the value of the right hand column on the screen (which depends on the graphics mode in use). It is defined in the main program to stop the cursor going off the screen causing an ERROR 141 – cursor out of range.

The first (+) bracket of this line has a value of 1 if the joystick is to the right and the right hand limit has not been reached while the second (1) bracket will have a value of 1 if the stick is to the left and the cursor is not on column 0 (the leftmost column on the screen). Thus the cursor will move right one place if the first condition is satisfied, left if the second condition is satisfied and stay in the same horizontal position if neither is true. If you do not want the left hand edge of the screen to be your limit you can define a variable TT3MIN in place of the zero.

Line 31110 - This line is the same but for vertical movement. TT4 is the vertical position (or row number) and TT4MAX is the bottom of screen. Again if you wish to reduce the height of travel use TT4MIN in place of the zero in the second bracket.

This two line subroutine does nothing on its own so I have included the programme Joydraw as a simple demonstration. Combine Joydraw with the subroutine and when it is run you can move around the screen with a joystick

```
II 9 REM **          PAGE 6          **
         **  SUBROUTINE TUTORIAL  **
         **   JOYDRAW PROGRAMME   **
YX 10 GRAPHICS 19:TT3MAX=39:TT4MAX=23
GL 20 COLOR 2:PLOT TT3,TT4
GC 30 COLOR 1:PLOT TT3,TT4
RQ 40 IF STRIG(0) THEN COLOR 0:PLOT TT3,T
   T4
AC 50 GOSUB 31100:GOTO 20
```

```
AJ 31099 REM **          PAGE 6          **
             **  SUBROUTINE TUTORIAL  **
             ** JOYSTICK UP/DOWN/L/R  **
NG 31100 TT3=TT3+(STICK(0)=7 AND TT3<TT3M
   AX)-(STICK(0)=11 AND TT3>0)
EK 31110 TT4=TT4+(STICK(0)=13 AND TT4<TT4
   MAX)-(STICK(0)=14 AND TT4>0):RETURN
CZ 31149 REM **          PAGE 6          **
             **  SUBROUTINE TUTORIAL  **
             ** JOYSTICK   + AND X    **
BG 31150 TT5=STICK(0):TT3=TT3+(TT5<8 AND
   TT3<TT3MAX)-(TT5>8 AND TT5<12 AND TT3>
   0)
KM 31160 TT4=TT4+((TT5-1)/4=INT((TT5-1)/4
   ) AND TT4<TT4MAX)-(TT5/2=INT(TT5/2) AN
   D TT4>0):RETURN
```

in position 1 drawing when the trigger is pressed and erasing when the trigger is released.
The only line which may need clarifying is line 40. 'IF STRIG(0)' is the same as 'IF STRIG(0) = 1' that is 'if the trigger is not pressed.

THE SECOND JOYSTICK SUBROUTINE

The second subroutine takes account of the diagonal positions of the joystick.

Line 31150 - For compactness TT5 has been put equal to STICK(0). In the brackets TT5 < 8 is when the joystick is to the right while (TT5 > 8 AND TT5 < 12) is when the joystick is to the left.
Line 31160 - Vertical position. The first (+) bracket has the operator ((TT5-1)/4 = INT((TT5-1)/4)) which is only true for values of TT5 of 5,9 and 13. You could use (TT5 = 5 OR TT5 = 9 OR TT5 = 13) instead and there must be other alternative expressions. The second (-) bracket uses (TT5/2 = INT(TT5/2)) which tests for an even number i.e. 6,10 and 14 for upward movement.

This subroutine can be tested with Joydraw by changing line 50 to :

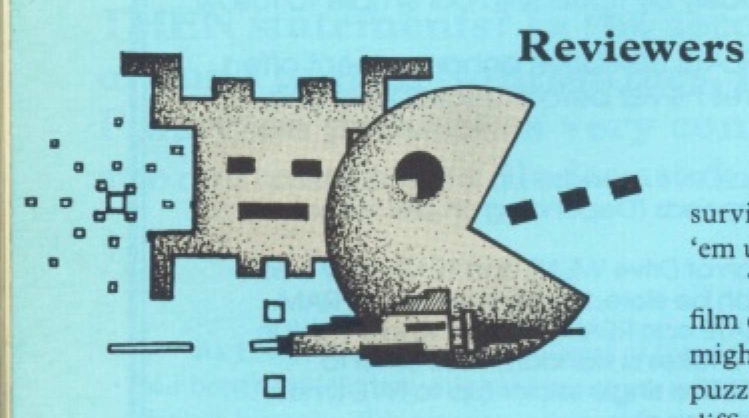
```
50 GOSUB 33150:GOTO 20
```

Familiarity with the logical operators is worth while as they are invaluable for programming multiple condition statements.

I hope that you can use these routines in your own programs and you should be able to find other applications for this type of programming.

SOFTWARE REVIEWS

Reviewers **Paul Rixon**
Les Ellingham
John Sweeney



THE LIVING DAYLIGHTS

Domark
48k cassette £9.95
1 Player
Joystick

You have to be good to be Bond. Fast reactions, quick thinking and a degree of good fortune are some of the qualities needed. Shame Timothy Dalton got the part in the film, but at least now there's a chance for you to audition for The Living Daylights – the computer game that is! Are you good enough to play? You don't need to be handsome or be able to pull the ladies, or even own a dinner suit, but you will need those qualities of fast reactions, quick thinking and a great degree of good fortune to survive the 8 levels of this difficult 'shoot 'em up with a difference'.

The game follows the plot of the film quite closely, so a trip to the pictures might help you figure out some of the puzzles at each level. These are not difficult but you are likely to lose several lives before you figure out just what you need to do to survive each level. The game starts with target practice in Gibraltar where you must splatter friendly SAS men on a target range with a paint gun. Trouble is they are shooting back at you and every hit loses you a point. Another problem is that one of them may not actually be a target on your side, you'll have to find him and kill him to go on to level 2.

Although armed initially with the paint gun, you can change weapons at any time by selecting a new weapon with the joystick from a panel at the bottom of the screen. In fact all control is by joystick and this is one of the reasons that The Living Daylights is such a challenge. The joystick controls a small cross cursor which you use to pinpoint where Bond will fire his chosen weapon and also to move Bond from one screen to another by placing the cursor at the far right of the screen. Fast reactions and thinking are needed to decide when to stop running and turn and fire – it will take some practice to survive even the first level with enough strength to complete the second! Add to this the fact that the joystick also selects weapons and allows Bond to duck, jump and roll and you have a game that will keep you going for hours trying to master each level.

The screen is split into three areas, each of which scrolls independently. The foreground scrolls fastest and is only there for effect whilst the mid-ground is where Bond runs along and has to avoid rocks and potholes etc. All adversaries are to be found in the background where they will pop up randomly to throw anything at Bond from bottles and knives to bullets! Oh, and you'll probably come across the odd helicopter dropping bombs as you progress! The screen design is good, scrolling as smooth as you have come to expect from the Atari and the sound effects match the action. There's even a pretty good tune to start the whole thing up.

So what of the other levels? Level 2 finds you in the Lenin People's Music Conservatory from where you have to get the Russian defector Koskov out to safety whilst avoiding snipers. Level 3 is The Pipeline where you must sneak past the pipe workers with Koskov. Guards and falling pipes cause trouble here. Level 4 is set inside The Mansion House. Koskov has been rescued but they want him back! A crack killer has been sent in and you'll need your wits about you. Can you trust the milkman?

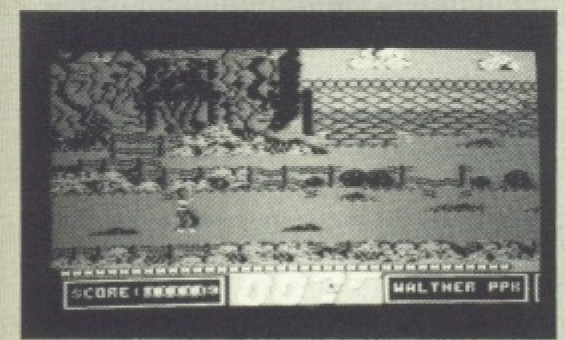
Level 5 is The Fairground where you have to meet another agent but whilst you managed to escape the killer Necros in the previous level he is not dead and still has orders to kill!. By now Koskov is missing and you find yourself in Tangiers where you must battle for your life on the rooftops. Coming near the end now, if you can get this far!

Level 7 is in The Military Complex in Afghanistan on a Russian Air Base (gets about does Bond). The Russians don't even like journalists in Afghanistan let alone secret agents so you had better watch out! Finally your objective – Whitaker's House – where you meet the mastermind behind it all, Brad Whitaker. Have you got what it takes to get past all his defences to finally win the game, roll the credits and go home to bed?

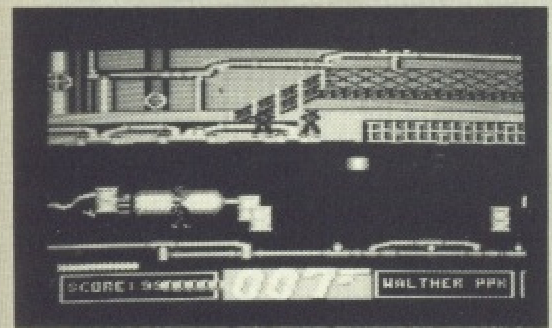
Some feat if you complete all of that. One added complication is that between each level you have a choice of just one weapon in addition to your pistol and if you choose the wrong one the chances of surviving the level are remote. Some weird and wonderful things are on offer from a bazooka to a ghetto blaster! Although basically a shoot 'em up game, you do have to think as well and a read of the (very brief) instructions on the packaging will give you some clues.

Enough words. This time we have lots of pics so take a look and judge for yourself how good it looks. If you are worried about a 'conversion' to the Atari let me just mention that each version has been programmed individually and the Atari version was done by a company

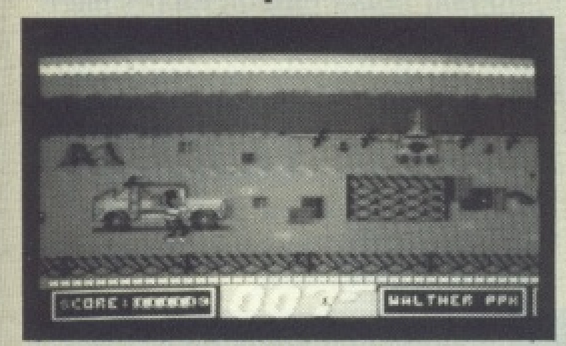




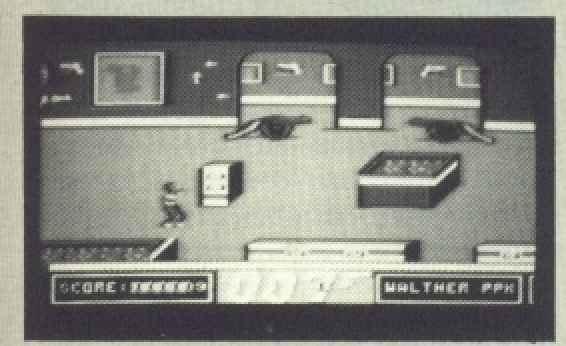
Level 1 – Gibraltar



Level 3 – The Pipeline



Level 7 – The Military Complex



Level 8 – Whitaker's House

called De Re Software. Those who have been with Atari some time will realise that this means the people involved know their Atari.

I am not going to tell you how far I got but I will let you into the secret of exactly how to get to Level 8. Come closer. Aaarghh!! Looks like Timothy Dalton has still got the part!

Les Ellingham

221B BAKER St

Datasoft
Disk
£14.95
1/4 players
Joystick/Keyboard

221B Baker St. is, of course, the legendary home of Sherlock Holmes so, not surprisingly, you play the part of Sherlock (or one of his colleagues) in attempting to solve numerous intriguing cases, mostly involving murder most foul!

It is an accurate copy of the board game of the same name which has been around for about 10 years and which bears many similarities to Cluedo: you move your character around the board on the throw of a dice, enter numerous buildings to obtain clues and, when you think you know the Who, How, and Why of the case, you check to see if you have won. Unlike Cluedo, each time you play 221B Baker St. you use a different scenario. There are 30 cases provided with the game, and supplemental libraries are planned. Each case consists of a couple of hundred words describing the circumstances of a crime, the various suspects involved in it, and what you have to discover about it in order to win. There are two types of clues: General Statement Clues (e.g. Alice Gloth was seen outside the Pub the night of the murder) which may or may not be red herrings and Puzzle Clues (e.g. KILLER CLUE (Four Parts) – 1: Capone's first name), very much like crossword clues and always sufficient to completely solve the crime if you can find them all.

Extras include the ability to lock locations, secret tunnels (not present in the board game), and the Carriage Depot which allows speedy transport around the town.

The board is angled on the screen, only showing a small part of the 20 by 19 board (making a map is recommended), the buildings are all shown in nice 3-D graphics. The characters (up to four of them) shuffle around the board in response to the joystick and entering a location causes a picture to be displayed, with various sound effects such as owls hooting and fog-horns sounding, and of course a clue is shown (you should make some checklists of the locations for recording your clues). Once the novelty of the graphics and the animation has worn off however, it all becomes rather laborious. The characters move slowly, the board is repainted rather than scrolled, and the pictures take ages to load from disk. As a one player game it has little to recommend it (the board game is unplayable by a single person), and once you have multiple players you have the problem of preventing the others seeing your clues on the screen. There are two solutions. One is to just make everyone else turn away which is extremely boring for those who have to turn away (of course in the board game you just get on with your turn while the previous player is looking in the clue book) and the second solution is provided by an option to have Coded Clues – this involves each player being allocated a code (there are 20 provided) and the clues being displayed with certain key words in code. This adds the extra dimension of allowing the players to try and break the codes and read each other's clues but I personally found that it slowed the game down even more, and that, since everyone has a full set of codes, it was relatively easy to work out which one each person was currently using.

The board game costs about £10 and has 40 rather than 30 cases. As such it is about half the price per case and it is much more playable given the plodding speed of the computer version. If you already have the board game note that 11 of the 30 are duplicates of the board game cases. It's a great game and I recommend you rush out and buy it now – but preferably the board version!

John Sweeney

PANIK!

Atlantis
Software
£2.99 cassette
1 player
1 joystick



Here's one for all you platform addicts out there who have been waiting patiently for a good old-fashioned exercise in monster bashing.

It has become something of a tradition in computer games to present a completely unbelievable story which, supposedly, explains the purpose of the game and why, indeed, you should want to play it at all! Not so in PANIK!, the concept is uncomplicated and the documentation does not attempt to persuade you otherwise. If you can remember the days of Broderbund's Apple Panic then you'll know exactly what this one is about. As any Crummydore owner will tell you, the

only sure way to dispose of a monster is to dig a trap, wait until he falls into it and then hit him over the head with your trusty shovel!

I couldn't help thinking that I'd seen these particular monsters before somewhere – possibly in Mastertronic's 'One Man and his Droid'. Unfortunately they are coloured in a similar manner to the man you are controlling, leading occasionally to utter confusion! Red monsters will be killed by falling through just one trap, but yellow and green nasties require two and three traps respectively, which calls for some nifty tactics in order to outwit them. Naturally, they are just as keen to see the back of you so it's slightly reassuring to know that you have two additional lives in hand.

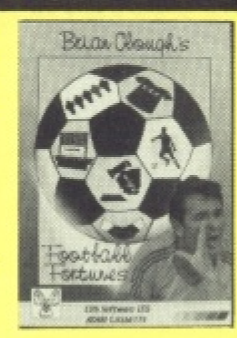
Each screen consists of several 'brick' platforms interconnected in the familiar fashion by ladders of varied length. Nothing new here. A time limit has been implemented in the guise of an oxygen level which depletes steadily until your demise. Obviously the idea is to complete the necessary task before this happens, thus obtaining additional bonus points to put you in contention for a place in the high-score table.

Atlantis software have come up with an unspectacular revamp of a classic theme. Not really my cup of tea, but platform enthusiasts will not be disappointed.

Paul Rixon

BRIAN CLOUGH'S FOOTBALL FORTUNES

CDS Software
£14.95 cassette
£17.95 disk
2-5 players
Keyboard only



Allow me to introduce the first Atari computer game that is not played on the computer. Puzzled? Then read on ... CDS Software's second Atari release is a football managerial game which is played with counters, cards, and a real 40cm squared cardboard playing surface!

BRIAN CLOUGH'S FOOTBALL FORTUNES (quite a mouthful!) provides competition for two to five players who take on the roles of team managers, the idea being to steer their teams to the top of the league tables, triumph in cup competitions and emerge at the end of the season with a healthy bank account. It is said to have been designed with plenty of advice from this Brian Clough chappie, who presumably receives a good share of the royalties for having his photograph on the inlay card.

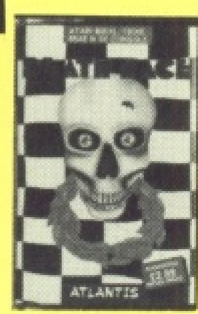
Packaging is quality stuff. A double sized box opens up to reveal a treasure trove of contents – five plastic counters of the sort you would expect to find in a Tiddlywinks set, 112 'player' cards each endorsed with the name of a famous(?) footballer, his field position and his 'star rating', six 'immunity' cards; ten blank cards in case your favourite player is not included, £3,700,000 in cash (must be a new design from the Royal Mint!) and finally that multicoloured board. It has thirty-six squares around its perimeter each stating a situation that is likely to occur in the every day life of the team, accompanied by a suitable representative logo. Oh, yes!. There is a computer program included too, but I'll get on to that in a moment!

The concept behind FOOTBALL FORTUNES is as follows. Each manager is given a squad of thirteen players, including defenders, midfielders, attackers, utility players and of course the goalie. If a manager is not happy with his squad then he can make substitutions, loans, transfers or bid for extra players at the auction (this is where skill comes into the proceedings). After removing the squads from the pack of player cards, the remainder are shuffled and placed face down on the board. They become the auction pile (more about that later).

Next thing to do is appoint a banker and a computer operator. The banker gives an initial handout to each manager and will deal with future financial matters as they arise. The computer operator activates the computer-die for each manager, who moves his counter accordingly thus landing on a square that represents the situation he must deal with. I won't go into full details, but as a couple of examples, if he lands on an 'Auction' square then the auction pile is turned face up and bidding commences. The highest bid wins the player on the pile and the manager must pay the bank, or else! If he lands on a 'Manager's Luck' square then the computer operator obtains an appropriate comment from the computer, which could be good news or an absolute disaster.

DEATH RACE

Atlantis
Software
£2.99 cassette
1 player
1 joystick



Let's all welcome a new company to the Atari scene called Atlantis Software, who have got off to a cracking start by entering this fast and furious dodge 'em type race game into the thriving and competitive budget market.

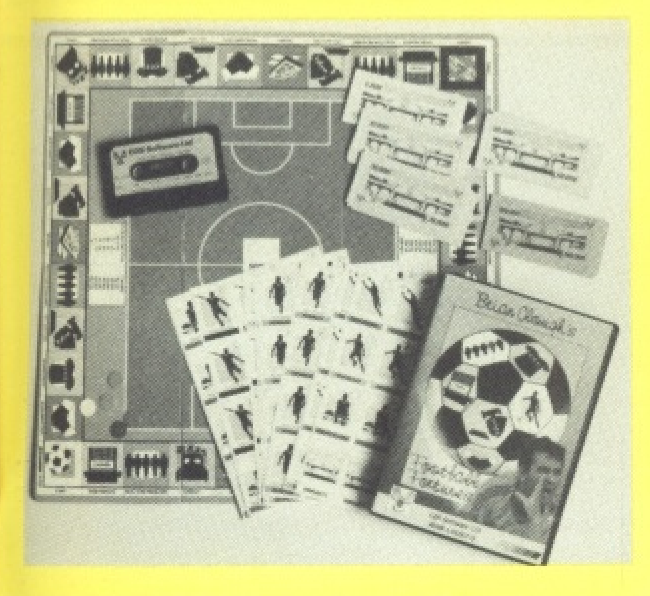
DEATH RACE takes nearly a quarter of an hour to load in from cassette, the reason being that it has been recorded in long inter-record gap format. If anyone from Atlantis is reading this, could we please have short IRG's in future? Reach for your driving gloves and crash helmet, assume a firm grip on your joystick and wait for the lights ... red ... green ... GO!

Overtake at least seventy cars within the eighty seconds allowed and you will acquire the right to continue, but with the added complications of heavier traffic and less time. There are five pre-selectable 'levels' however these seem to do little more than change the screen colours. In line with old favourites such as Baja Buggies and Pole Position, your screen view is slightly to the rear of the car you are 'driving' – and what a car it is! This one is not your every-day Formula One Grand Prix model. Apart from being a two colour PMG *sprite* it is also supposedly capable of an amazing 300mph! Attempt to embark on a slalom course around slow-moving traffic at this speed and you will appreciate the difficulties. Your five lives aren't going to be around for long!

Graphics? Well, they're not up to Elektraglide standards (then what is?) but at 300mph the last thing you will want to be doing is admiring the scenery. Sound consists of adequate engine roars, beeps as each car is overtaken and a suitable racket to accompany the event of your car exploding! The race track is of the Roman variety (not a bend in sight) but it disappears realistically into the background as the opposing cars alter size perspectively to give a good 3-D effect. The surrounding scenery changes periodically, albeit somewhat abruptly, from high rise office blocks to countryside and water, or it may occasionally blank out completely as you enter 'night play'.

Only a couple of gripes. Sometimes, a car will smash into the back of yours before you've had a chance to accelerate off of the starting grid, and also there is no 'pause' facility. DEATH RACE is a commendable first time effort that will test your reactions to their limits. I have every reason to believe that it will become a front runner in the hard-fought battle between the software houses to claim top-spot in the budget league. Don't miss it!

Paul Rixon



After each manager has completed his move the computer operator calls up the fixtures list and inputs the team strength for each manager. The computer determines the results of the match on the basis of each team's 'star rating'. The managers can now collect gate money from the banker.

Having lost or made a fortune, the whole process begins again and so on until the end of the season. Every manager is awarded game points based upon his performance in the ten strong league, European competitions and F.A.Cup, together with his cash balance at the end of the game. There is no limit to the number of seasons over which the game can be played, this must be determined by mutual agreement. If it all sounds a bit complicated then don't worry, CDS have provided a comprehensive instruction leaflet which explains all of the rules in a clear and readable manner. They have even provided a FOOTBALL FORTUNES hotline number lest you get into difficulty.

Now for the bit I have deliberately left until last, and that is the computer program. The first thing I noticed was the loading instruction – 'Type RUN "C:"'. Surely not! Yes, the entire program is written in B-A-S-I-C. After a twelve minute wait (the fancy hi-res title screen deserves a mention) a READY prompt appeared. Just for the fun of it, I typed LIST, and there it was – not even protected in the customary scrambled variables format!

I typed RUN, and following another wait it asked for the names of the teams, the names of the managers and the skill level required (1-4). Each manager was then allocated his initial squad, and the tape started turning, yet again, until six minutes later when ... another READY prompt! Everything about the program seems to involve a delay. I have nothing against Basic being used but I have no doubt that using it in a program whose primary purpose is sorting out data was a big mistake.

The screen display consists of a pleasantly redefined character set on a multicoloured graphics mode 0 background. It presents a menu from which the league and point tables can be viewed as well as issuing random 'Manager's Luck' and 'Selection Problems'. One nice feature is the 'teleprinter' which springs into operation whenever match results become available.

One of the more essential features of the program must surely be the automated die, however it did not seem to work on my 800XL. Whether this was due to Revision B(ug) Basic or a programming error I am not sure, but each time I selected the die option my computer locked up – which meant reloading the entire program.

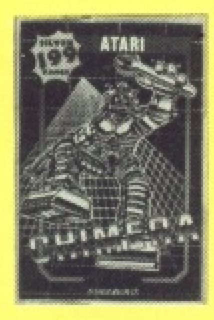
BRIAN CLOUGH'S FOOTBALL FORTUNES is a fascinating board game which, in my opinion, should have been marketed as such. The program does a grave injustice to the Atari's capabilities, which is a great shame as it lets down an otherwise praiseworthy package.

C'mon CDS, you can do better than this. A great package but what about the program to go with it?

Paul Rixon

CHIMERA

Firebird
£1.99 cassette
1 player
1 joystick



Firebird established themselves as a major UK software house creating 'cheapo' games for those who had not yet discovered the unrivalled power of Atari. 1985 saw the production of their first Atari releases, one of which was an arcade adventure called CHIMERA in the style popularised by Ultimate's Alien 8 on the Spectrash. Now they have added a new dimension to re-release mania by resurrecting CHIMERA, previously a £3.95 'budget' game in their Super Silver range but now demoted to plain Silver status at the ridiculously low price of £1.99.

If you missed the story first time around, let me guide you through. As luck would have it, you have managed to get lumbered with the unenviable job of saving the earth from total annihilation (yet again!). The problem seems to be that an incoming alien vessel looks set to pulverize life as we know it, unless of course you can prevent this happening by activating the vessel's conveniently inbuilt self destruct mechanism and (preferably) escaping prior to its detonation. If you are thinking 'that doesn't sound like the easiest task in the universe' then you would be dead right! The game begins with a warning that it will not be solved quickly and if you manage to complete it within a month then you must be some kind of freak. I do not doubt these claims for a minute!

You control the somewhat sensitive movements of Chimera (Could be one of R2D2's relatives) around an astounding three dimensional complex of rooms and corridors which have to be explored if you are to collect all of the necessary items, including loaves of bread and mugs of water to top up your food and liquid supplies. The graphics here are excellent, especially the intricate detail of your Chimera.

The lower half of the screen displays information on the state of your health, the current object being carried and the score, which is calculated according to the number of problems you have solved. Above this is a scrolling message indicator that keeps you informed on the the latest gossip and provides assistance should you request it from computer terminals which appear throughout the complex.

Added difficulties arise in the form of water-sapping radiators, electro-static barriers, hidden objects and that damned irritating thumping noise in the background! Drawing up a map of the complex is absolutely essential. There is no save game feature so it will be necessary to plot the positions of bread, water and other artifacts for future reference. Pause mode deserves a mention, there is a super 'rainbow' graphics demo accompanied by some good quality music.

Compared with Mastertronic's Molecule Man which runs along similar lines, CHIMERA comes up tops in my book. Don't expect a fast paced action game, but be prepared for a real challenge. At 'normal' prices it would be a good buy. At under two pounds, you can't go wrong!

Paul Rixon

HELPING OUT

As a relief from programming tutorials, and the fact that this issue will be on widespread public sale, I thought that I would share with you some of my letters which I receive from beginners. Most come with an s.a.e. so answers will be returned directly. Those that do not enclose the necessary s.a.e. just have to wait for moments like this.

For those of you not familiar with this column, let me explain the idea. I try to help out those people who are just beginning their ATARI computing. I write about the basics of computing and try to keep it at a low level. I cannot please everyone with my level of writing – even beginners progress! – but I hope that the column has been instrumental in getting a few new Atari owners on the road to writing their own programs.

TYPING LISTINGS

I have often conversed with the Editor, Les Ellingham, about the magazine listings. His biggest headache is people who ring him about a listing that they cannot run, yet lots of other people can. I can verify that after many hours of typing and proofreading a type of word blindness occurs. It is very hard to spot the mistake at the time, yet next day the error is so obvious. The moral is to rest your eyes and give it another try much later. Another good point is to read the instructions – when all else fails!

I received a letter from a reader in Co. Meath who asked about TYPO 3, a great debugging aid when typing in programs. The two letter code printed in the magazine is only for comparison with the code that appears on screen when you use TYPO 3. If the codes are wrong then you must find the error and correct it yourself, the computer will not do it for you! The program and directions are in every edition of the magazine.

SOME COMMON ERRORS

Error codes can be very frustrating if you do not know what they mean. Issues 21 and 22 of PAGE 6 carried an explanation by Steve Pedler of these codes and are worth getting hold of. As an example, in the same letter ERROR 130 was quoted. This means that a non existent device was specified. This could be as simple as CLOSE #11 instead of CLOSE #1 – double typing a character. It could be more involved such as CLOSE #N1. N1 is a variable that should have been set at the start of the program and either has not been set or has a wrong value.

A really common error is 143 AT LINE 0. When the program has loaded a mistake has been found by the computer. Getting to know error codes is important. If possible try to get hold of the issues mentioned or a photocopy of the relevant pages and pin them up somewhere handy to your computer. This will save a lot of time and frustration.

Remember to LIST the program often to cassette or disk, press NEW and RETURN then ENTER the program back again and continue typing. This may not fully combat the infamous ATARI lockup (some other computers are prone to this as well) but at least you do not have to type the listing from the beginning again.

THE WIDER WORLD

Several months ago, all fired up after reading 'Going Online' by John Davison in PAGE 6, I obtained a modem and tried out some bulletin boards. I would like to thank Ian Hillen for his letters and kind words about PCW, and for his help during the time I wandered around 'The Gnome at Home'. If you are interested then you could contact him at the BBS, 01 888 8894 (ST Phone Home). I consider it an interesting experience.

I had a letter from a man in Littlehampton who had trouble writing programs. I diagnosed his problem as trying too hard! The secret for beginners is to type in very small programs, then amend one bit at a time and see what happens. Get to know the commands and how to use them before you try out any long listings. If you are a slow typer, or are not used to the control characters or even if like me you prefer the easy life (who mentioned the word lazy?) why not consider a subscription to PAGE 6 on disk?

WHAT BOOKS TO READ?

I have often been asked about a good book to start off a programming hobby. I have always recommended 'ATARI BASIC – a self teaching guide' by Albrecht (called the Wiley manual) for outright beginners and 'Your ATARI Computer' by Len Poole and 'Revised Mapping the ATARI' by Compute! Books which are books that everyone who wants to program should have.

I have sometimes been asked to debug or write programs for readers. This is very time consuming as you can imagine and it is something I do not undertake. I will however write small programs, say four or five lines, to demonstrate a particular point. It is then up to the readers to investigate this and try to amend it to his or her own use. One letter prompted me to start the 'Write – a – game' articles (issue 18 onwards), causing sleepless nights for Cliff Winship! Sometimes I receive disks; these give me problems if they are double density as I still use an 810 (small hint to Paul Rixon).

Having just used the word 'her', why is it that we see very few female names in PAGE 6? What is Linda Tinkler doing now? one asks. *(Look out for programs by Sarah Keates and Linda Naysmith in forthcoming issues. Ed.)*

On odd occasions I have received responses from people whose letters I have answered. They are nice to read, as they give me an idea of how much help I have been. One such letter

STEPS.... FIRST STEP

Mark Hutchinson's column for those new to Atari programming

was from Mrs. Ellen Barnes whose son wanted to purchase a computer. It was a very nice letter, but what made it better was to see an article from Warren in Page 6 so that just proves that you can do it as well!.

If you care to write to me at the address below, remember the s.a.e. if you want a reply.

MARK HUTCHINSON.
1, HOLLYMOUNT,
ERINVALE, FINAGHY,
BELFAST,
BT10 0GL

THE FIRST STEPS COMPUTER DICTIONARY

Over the next few issues I have decided to write definitions of some common words found in computing circles. Many beginners don't understand the jargon and I hope this will clear up some of the mystique. Unfortunately the definitions will be quite short due to lack of space (the Editor keeps cutting my column!) but I hope they help.

Address – A number identifying a specific location either in memory or, with a peripheral, a specific register within the peripheral interface.
Algorithm – A sequence of steps to be followed when performing a task.
Alphanumeric – a character from either the 26 letters or ten numerals.
Analog – Relating to continuous quantities.
ASCII – The American Standard Code for Information Interchange. A 6, 7, or 8-bit code used to represent letters, decimal numbers and certain control functions.
BAUD – One signalling element per second. The measurement of the signalling rate on a data channel.
Binary digit (bit) – The smallest unit of information that can be used in a digital computer. Either a 0 or 1.
Byte – A group of bits considered as a unit. A byte is the smallest unit of information that can be addressed.
Bootstrap loader (boot program) – A short program that allows more complex program to be loaded through an input device, i.e. cassette.

COMING SOON IN FIRST STEPS ......
reading and saving screens and more dictionary definitions.

automake

run your basic programs automatically

In issue 27 we published a letter asking for a program to automatically run a BASIC program when a disk is booted. We received dozens of submissions from readers but almost all of them were based on a program published in Compute! magazine which, because of copyright, we cannot re-publish. So, we scoured through several hundred User Group newsletters we have acquired over the years and found one in a recent issue of Pan Atari News from the Panama Canal Atari Users Group. It would only run a program called AUTORUN.BAS so we added a few lines of code to make it run any program you wish and we have called it AUTOMAKER.

```
EI 1 REM ******************************
PB 2 REM *          AUTOMAKE          *
RI 3 REM *    Original program from   *
HY 4 REM *        PAN-ATARI-NEWS      *
HZ 5 REM *  modified by Les Ellingham *
ED 6 REM * -------------------------- *
JA 7 REM *  PAGE 6 MAGAZINE - ENGLAND *
EP 8 REM ******************************
NO 9 REM
IP 10 DIM F$(14),FILE$(12):F$="D:"
OP 20 GOSUB 110
BH 30 OPEN #1,8,0,"D:AUTORUN.SYS"
RL 40 FOR I=1 TO 73:READ A:PUT #1,A:NEXT
   I
FE 50 FOR I=1 TO 14:A=ASC(F$(I,I))-32:PUT
    #1,A:NEXT I
TW 60 FOR I=1 TO 7:READ A:PUT #1,A:NEXT I
   :CLOSE #1:? "ALL DONE!":END
MJ 70 DATA 255,255,0,6,81,6,216,24,173,48
   ,2,105,4,133,204,173,49,2,105,0,133,20
   5,24,160,0,177,204,105,162,133,212
WU 80 DATA 160,1,177,204,105,0,133,213,16
   0,32,185,49,6,145,212,136,208,248,169,
   13,141,74,3,96,0,48,47,43,37,0,24
XQ 90 DATA 20,18,12,17,18,26,50,53,46,0,2
SP 100 DATA 2,226,2,227,2,0,6
VZ 110 ? "KENTER FILENAME OF PROGRAM TO R
   UN        (NO D:)    ":INPUT FILE$:IF FIL
   E$="" THEN ? "K":GOTO 110
AG 120 F$(LEN(F$)+1)=FILE$
HJ 130 IF LEN(F$)<14 THEN F$(LEN(F$)+1)="
             "
LX 140 ? "INSERT DISK IN DRIVE 1 AND HIT
   RETURN":INPUT FILE$
ZH 150 RETURN
```

Type it in, check it with TYPO 3, and *SAVE it to disk before you run it*. Now place a disk, with DOS on it, into drive 1 and run the program. You will be prompted for the filename of the program you want to autorun. Type it in, making sure that it is correct, and press RETURN when prompted. The program will write an AUTORUN.SYS file to your disk. Now whenever you boot up with that disk your BASIC program will run automatically! If, later on, you want to run another program instead, you could always run the AUTOMAKER program again and it will overwrite your original AUTORUN.SYS file.

AUTOMAKER is not the most sophisticated program but it does the job. What more do you want!

THE RESOURCE FILE

The Resource File is a new service provided by PAGE 6 to help Atari owners (both 8-bit and ST) find sources of information, help and supply. An entry in this feature does not necessarily imply any endorsement by PAGE 6 and readers are advised to check for themselves to ensure that the information is still current. We would ask any readers who find information to be inaccurate or out of date to let us know so that an entry may be amended or deleted.

RETAILERS

The following retailers, to the best of our knowledge, support Atari 8-bit or ST.

ATARI WORLD
15, Fennell Street
Manchester
M4 3DU
Tel. 061 834 4941

BRIGHTON COMPUTER EXCHANGE
2, Ann Street
Brighton
BN1 4GP
Tel. 0273 686650

CHIPS
53, Rugby Road
Worthing
Sussex BN11 5NB

COMPUTER CENTRE
174, High Street
Hornchurch
Essex
Tel. 04024 75613

COMPUTER WORLD
212, Broad Street
Birmingham
B15 2AY
Tel. 021 643 9100

GAMER
71 East Street
Brighton
Sussex BN1 1HQ
Tel. 0273 728681

GLASGOW COMPUTER CENTRE
Virginia Galleries
33 Virginia Street
Glasgow
G1 1TU
Tel. 041 552 1522

GUERNSEY COMPUTERS LTD.
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Guernsey
Channel Islands
Tel. 0481 28738

HI-FI WESTERN LTD.
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Newport
Gwent
Tel. 0633 62790

INTOTO
1, Heathcoat Street
Hockley
Notts. NG1 3AF
Tel. 0602 410987

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244 – 248, Hertford Road
Enfield
Middx
Tel. 01 804 1767

LADBROKE COMPUTING LTD.
33, Ormskirk Road
Preston
Lancs. PR1 2QP
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17, The Mall
Craigshill Shopping Centre
Livingston
West Lothian
Tel. 0506 36978

MICROBYTE
71, Seaview Road
Liscard
Wallasey
Merseyside L45 4QW
Tel. 051 630 6933

MICRO-TRONICS
27a, Market Street
Tamworth
Staffs
Tel. 0827 51480

MIKES COMPUTER STORE
292, London Road
Westcliff-on-Sea
Essex SS0 7JJ
Tel. 0702 332554

P.F.MURPHY & SONS LTD.
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Co. Louth
Ireland
Tel. 041 37292

ONE STEP BEYOND LTD.
11a, Castle Meadow
Norwich
NR1 3DG
Tel. 0603 663796

ORDEM
21, Harris Arcade
Reading
Berks. RG1 1DN
Tel. 0734 474768

PEATS ELECTRONICS
197, Parnell Street
Dublin 1
Ireland
Tel. 0001 727799

RADFORD HI-FI LTD.
52, Gloucester Road
Bristol
Avon
Tel. 0272 428247

SILICON CENTRE
7, Antigua Street
Edinburgh
Scotland
Tel. 031 557 4546

SOFTWARE EXPRESS
514 – 516, Alum Rock Road
Alum Rock
Birmingham B8
Tel. 021 328 3585

A.S. WOOTTON & SON
116, Edleston Road
Crewe
CW2 7HD
Tel. 0270 214118

YORK COMPUTER CENTRE
9, Davygate Arcade
Davygate
York YO1 2SU
Tel. 0904 641862

The only criterion for an entry in this column is that the retailer must stock PAGE 6. That is the only measure we have that a retailer is genuinely interested in supporting Atari. Phone us on 0785 213928 if you wish to be included.

BBS

Name: Gamlingay FIDO
Number: 0767 50511
Hours: 24 hours
Baud: 300 – 2400
Features: Atari SIG and program library

Name: THE VILLAGE
Number: 01 464 2516
Hours: 24 hours/7 days
Baud: V21, V22, V22BIS, V23
Features: 8 bit area, ST area, CP/M area

Do you run a Bulletin Board which caters mainly for Atari 8-bit or ST? For an entry in this feature please send us details as above (5 words max on Features!) on a plain sheet of paper headed **RESOURCE FILE – BBS**.

Any background information included will be filed for reference but not published.

USER GROUPS

Name: CROMWELL ATARI USER GROUP
Contact: Dave Leggett
3, Chestnut Close
Brampton
Huntingdon
Cambs
Phone: 0480 50553
Members: All welcome

Name: SOUTH WALES ATARI GROUP
Contact: Raymond Price
Mandeville House
9, Lewis Street
Canton
Cardiff
CF1 8JY
Phone: 0222 394592 394501
Members:

Name: 'RAGE HARD' A.U.G.
Contact: Tony Longworth
13, Greenfield Road
Little Sutton
South Wirral
Cheshire
L66 1PE
Phone: 051 339 0405
Members: 8 bit users everywhere

Name: BOURNEMOUTH AREA COMPUTER CLUB A.U.G. (BACCAUG)
Contact: Colin Hunt
Phone: 0202 677895
Members: ST, 8-bit, hardware and software development.

Name: LONDON ATARI CLUB
Contact: Andrew Banner
P.O. Box 319,
London, SE15 3NZ
Phone: 01 639 8657 (evenings & weekends)
Members: Anywhere! 8-bit and ST

Name: SIGATARI
Contact: Glenn Leader,
143 Richmond Road,
Leytonstone,
London, E11 4BT
Phone: 01 556 0395
Members: Those interested in more unusual applications

Name: ST CLUB
Contact: Paul Glover
P.O.Box 20
Hertford
SG13 8NN
Phone: -
Members: Mail only(?). Worldwide.

Do you want others to know about your group? Send details as above ONLY (5 words max. on Members!) on a plain sheet of paper headed **RESOURCE FILE – USER GROUPS**.

That's all you get! We will not publish any other details as meeting times and places tend to change. Appoint someone responsible to handle any enquiries received.

IT'S UP TO YOU!

If you feel that your organisation should have an entry in this feature, write to us. Whilst we do have details of many other User Groups and Bulletin Boards we have not included these as we do not know if the details are correct.

PAGE 6 reserves the right to delete any entry from this feature for any reason. Inclusion does not imply any endorsement by PAGE 6 and PAGE 6 can accept no responsibility for the accuracy or completeness of an entry. Please tell us if you find any entry out of date.

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